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EXTENDED ARRAY EVALUATION PROGRAM: SPECIAL REPORT NO. 14. EVALUATION OF THE NOISE CHARACTERISTICS AND THE DETECTION AND DISCRIMINATION CAPABILITIES OF THE VERY LONG PERIOD EXPERIMENT (VLPE) SINGLE STATIONS AND THE VLPE NETWORK

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Texas Instruments, Incorporated

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EVALUATION OF THE NOISE CHARACTERISTICS AND THE DETECTION AND DISCRIMINATION CAPABILITIES OF THE VERY LONG PERIOD EXPERIMENT (VLPE) SINGLE STATIONS AND THE VLPE NETWORK

SPECIAL REPORT NO. 14

EXTENDED ARRAY EVALUATION PROGRAM

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ABSTRACT

This report presents an evaluation of the noise characteristics of eight VLPE stations, the detection and discrimination capabilities of eleven VLPE stations, and the VLPE network.

Spatial and temporal noise relationships are presented for eight VLPE stations. Maximum likelihood m_b detection estimates show for the 50 percent detection threshold at single stations an m_b of about 4.7 and for the VLPE network an m_b of about 4.2. Matched filters applied to a selected suite of events increases the number of detections by a factor of two. The discrimination capability of the single VLPE stations and the VLPE network is presented in terms of M_s versus m_b, Love to Rayleigh wave amplitude ratios, and surface wave radiation patterns.

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VLPE Detection Thresholds						
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$M_s : m_b$						
LQ/LR						
Radiation Patterns						
Maximum Likelihood						

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SECTION I
INTRODUCTION

This report presents an evaluation of the noise characteristics of eight of the Very Long Period Experiment (VLPE) single stations and the detection and discrimination capabilities of eleven VLPE stations and the VLPE network. The purpose of the VLPE is to improve detection and discrimination capabilities with the use of a small network of high gain, high quality, long-period digital seismographs at various locations throughout the world.

The VLPE instrumentation has been described in detail by Pomeroy, et. al., (1969), and studies of the data from the station of Ogdensburg, New Jersey have been presented by Savino, et. al., (1971). A general review of eight of the long-period stations with their capabilities and the application of various filter techniques on digitally recorded data have also been given by Savino, et. al., (1972).

Recent reports by Alsup and Becker (1973a, 1973b) describe the vertical and three component structure of the earth noise for eight VLPE stations. Lambert and Becker (1973) presented the preliminary detection and discrimination capabilities of nine VLPE stations, the VLPE network, and the VLPE-NORSAR-ALPA combined network.

The data base for this report extends the study of vertical and horizontal earth noise with VLPE data during November and December 1972, and January 1973. The data base for the signal analysis is extended and consists of 874 Eurasian events for a total of 3577 event-station combinations. The results of techniques applied to these data include the following:

- An analysis of the long-term broad band vertical earth noise, maximum trace amplitude versus RMS amplitude, three component broad band earth noise, and intercomponent noise correlation.
- Maximum-likelihood estimates of detection capability based on m_b for VLPE single stations and the VLPE network.
- The estimated reduction of mixed events in terms of probabilities for various VLPE networks based on the present VLPE capability.
- Preliminary analysis of the Matched filters and Three Component Adaptive processor on a restricted suite of events.
- Discrimination capability of single VLPE stations and the VLPE network as functions of M_s versus m_b, Love to Rayleigh wave amplitude ratios, and surface wave radiation patterns.

In Section II, the data base is presented in detail with a complete listing of all event data and the calibration curves for all VLPE stations. Section III presents the VLPE spatial and temporal noise relationships. In Sections IV and V, we present the detection and discrimination capabilities of the VLPE single stations and the VLPE network. Finally, conclusions based on this analysis and recommendations for future studies are given in Section VI.

SECTION II
DATA BASE

A. GENERAL DESCRIPTION FOR NOISE ANALYSIS

The data base for the VLPE noise analysis consists of 379 one hour vertical noise samples for stations in Australia (CTA), Thailand (CHG), Israel (EIL), Norway (KON), Hawaii (KIP), New Mexico (ALQ), Bolivia (ZLP) and Japan (MAT) during November and December 1972, and January 1973. In addition, 133 one hour horizontal noise samples were analyzed for stations at EIL, ALQ, ZLP, and MAT.

B. GENERAL DESCRIPTION FOR SIGNAL ANALYSIS

We use digital recordings from all available VLPE stations for Eurasian events during three time periods: January 1, 1972 through March 20, 1972, June 1, 1972 through August 31, 1972, and November 1, 1972 through December 31, 1972. The first time period (Network 1) includes station data from Thailand (CHG), Alaska (FBK), Spain (TLO), Israel (EIL), Norway (KON), and New Jersey (OGD). The second time period (Network 2) includes data from Australia (CTA), Thailand (CHG), Spain (TLO), Israel (EIL), Norway (KON), New Jersey (OGD), Hawaii (KIP) and New Mexico (ALQ). The third time period (Network 3) includes data from CTA, CHG, EIL, KON, OGD, KIP, ALQ, Bolivia (ZLP) and Japan (MAT). The geographic location of each station is given in Table II-1 and shown in Figure II-1.

Tapes that were available for processing for the year 1972 covering the three time periods are listed in Table II-2. Attempts were made to process and analyze all available data. Table II-3 summarizes the number of events processed at each station. A considerable amount of data was lost

TABLE II-1

VERY LONG PERIOD EXPERIMENT (VLPE)

STATIONS AND LOCATIONS

Station	Designator	Latitude	Longitude
Charters Towers, Australia	CTA	20.09S	146.26E
Chiang Mai, Thailand	CHG	18.79N	98.98E
Fairbanks, Alaska	FBK	64.90N	148.01W
Toledo, Spain	TLO	39.86N	4.02W
Eilat, Israel	EIL	29.55N	34.95E
Kongsberg, Norway	KON	59.65N	9.59E
Ogdensburg, New Jersey	OGD	41.07N	74.62W
Kipapa, Hawaii	KIP	21.42N	158.02W
Albuquerque, New Mexico	ALQ	34.94N	106.46W
Lapaz, Bolivia	ZLP	16.50S	68.13W
Matsushiro, Japan	MAT	36.54N	138.21E

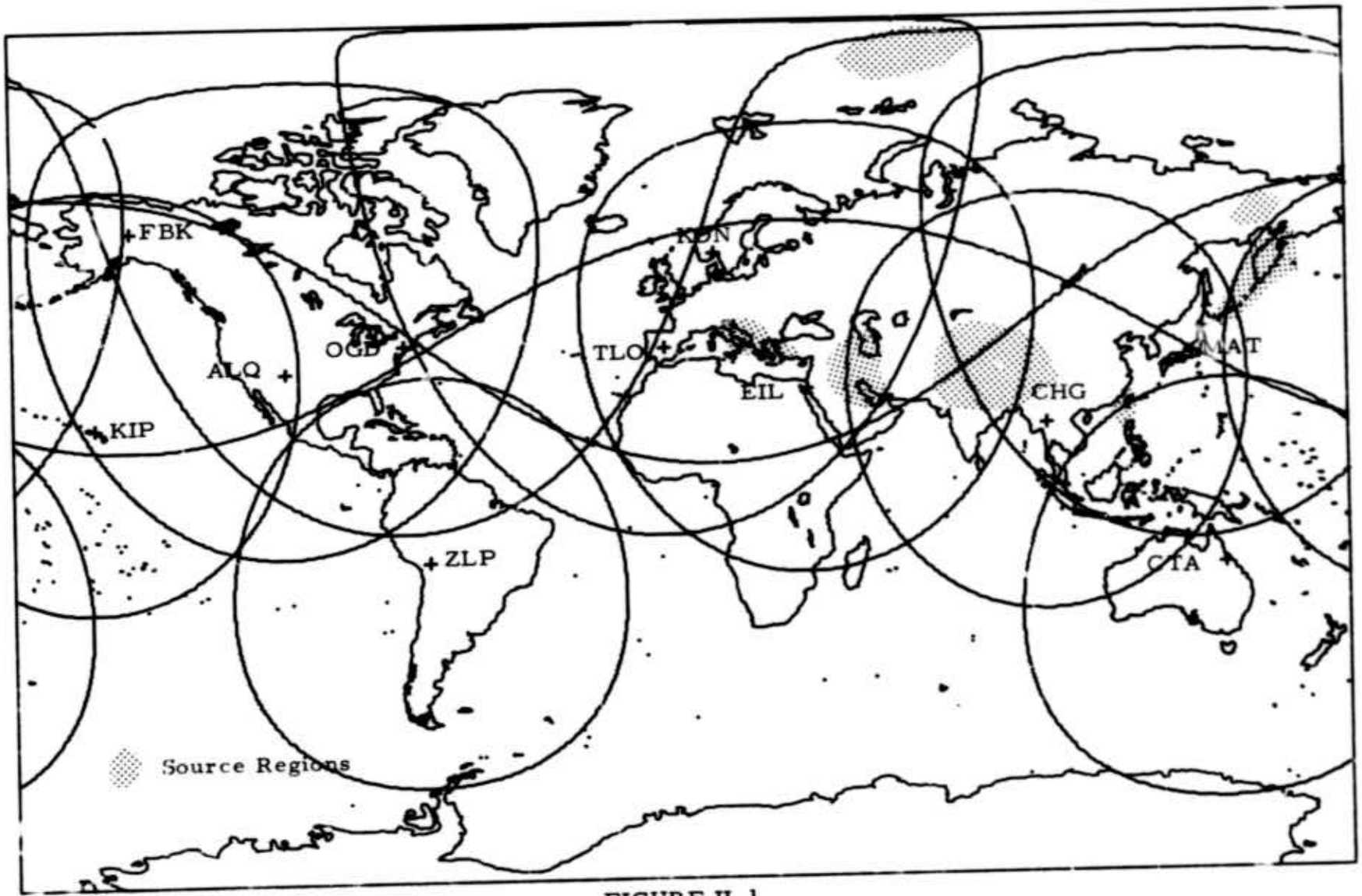


FIGURE II-1

MAP OF VLPE STATIONS AND CIRCLES AROUND EACH SITE WITH RADII OF 50° DISTANCE

TABLE II-2

VLPE DIGITAL DATA AVAILABLE AT SDAC
AS OF AUGUST 31, 1973
* Test Tape

Year 1972	CTA	CHG	FBK	TLO	EIL	KON	OGD	KIP	ALQ	ZLP	MAT
January		1-31	1-31	1-31		1-31	1-31				
February	19-20*	1-29	1-29	1-24 28-29	24-25	1-29	1-29				
March		1-4 15-26	1-31	1-28	10-31	1-3 6-31	1-14	15-31	31		
April	24-30	1-27	1-25	1-26	1-5 9-24	1-12 17-30	6-30	1-30	1-30		
May	1-31	30-31		11-26	5-31	1-31	1-4 30-31	1-11 14-31	1-19 30-31		
June	1-30	1-12		10-30	1-30	1-30	1 6-30	1-30	1-30		
July	1-31			1-31	1-31	1-31	1-31	1-31	1-31		
August	1-31	17-18 25-30		1-31	1-31	1-31	1-21 24-28 30-31	1-31	1-7 31		
September	1-30	22-28		1-30	1-2 15-18	1-30	1-21 29-30	1-30	1-31		
October	1-31			1-26	11-23	1-31	1-6	1-31	1-31		
November	1-30	3-30				1-30	7-10 18-27 30	1-30	1-5 10-30	4-24 26-30	
December	1-7 11-31	1-31			3-31	1-31	1-31	1-31	1-31	1-31	22-31

TABLE II-3

SUMMARY OF VLPE EVENTS PROCESSED FOR
JANUARY 1, 1972 - MARCH 20, 1972,
JUNE 1, 1972 - AUGUST 31, 1972, AND
NOVEMBER 1, 1972 - DECEMBER 31, 1972

Station Number	Station Code	Events Processed	Events Detected	Events Not Detected	Mixed Events	System Clipping Spikes, etc.
1	CTA	313	73	135	71	34
2	CHG	387	119	140	87	41
3	FBK	298	67	186	40	5
4	TLO	463	130	229	93	11
5	EIL	363	100	171	50	42
6	KON	485	153	226	101	5
7	OGD	263	51	113	34	65
8	KIP	543	136	225	132	50
9	ALQ	331	50	125	73	83
10	ZLP	107	15	52	26	14
11	MAT	24	6	10	3	5
Totals		3577	900	1612	710	355

during the first half of 1972 (January through June) due to operational and recording problems (see Lambert and Becker, 1973, for details). The quality of data improved significantly during the latter part of 1972 and in fact, virtually all field data tapes processed were useable.

The results are tabulated in Appendix II-B through II-L for each station with appropriate comments. A total of 3577 event-station combinations are listed; many events were recorded at several stations.

A total of 874 Eurasian events or 862 earthquakes and 12 presumed explosions are tabulated in Appendix II-A. Information for each event includes the date, origin time, epicenter location, m_b, the seismic region, and a code indicating the source list for the event. Events 116, 260, 339, 456, 626, 652, 672, 679, 699, 755, 797, and 865 are presumed to be explosions. (Three events, numbers 277, 291, and 351 from Western Idaho, California - Mexico border, and Easter Island region were inadvertently included in the list and were processed and analyzed with the 874 Eurasian events.)

The detection capability based on the presence of Love waves was not attempted. Erratic static gains were encountered from time to time on the horizontal components at most stations and especially during the first half of 1972. However, Love wave amplitudes were measured when possible.

We reviewed the m_b determinations for all events where possible to determine whether any regional or near regional m_b values were included in the average m_b. It was found that the PDE lists several events from Italy where near station values of m_b had been included. The reported m_b values for these events were from 0.2 to 0.6 magnitude units larger than the average of the teleseismic values. We accepted only the teleseismic m_b values as valid estimates. Those values of m_b which were changed are recorded and noted with an asterisk in Appendixes II-B through II-L. The original m_b values are listed in Appendix II-A. All graphs in this report which have m_b values as parameters use the revised teleseismic m_b values.

C. STATION CALIBRATIONS

The instrument calibration and system response data were originally supplied by Lamont Doherty Geological Observatory and more recently by the Albuquerque Seismological Center, Environmental Research Laboratories of NOAA. These data are shown for all of the VLPE stations in Appendix II-M.

SECTION III

VLPE SPATIAL AND TEMPORAL NOISE RELATIONSHIPS

A. INTRODUCTION

The vertical structure of earth noise for VLPE stations at Australia (CTA), Thailand (CHG), Alaska (FBK), Spain (TLO), Israel (EIL), Norway (KON), New Jersey (OGD), and Hawaii (KIP) was reported by Alsup and Becker (1973a). A total of 604 one hour noise samples was included in the above analysis for parts of August through October 1971, and June through August 1972.

Alsup and Becker (1973b) have also reported on the three component structure of earth noise for 491 one hour noise samples and for the corresponding stations and times indicated above.

This report extends the study of vertical and horizontal earth noise for VLPE data during November and December 1972, and January 1973, and includes 379 one hour vertical noise samples for stations in Australia (CTA), Thailand (CHG), Israel (EIL), Norway (KON), Hawaii (KIP), New Mexico (ALQ), Bolivia (ZLP), and Japan (MAT). Further, a total of 133 one hour horizontal noise samples was analyzed for stations EIL, ALQ, ALP, and MAT.

B. LONG-TERM BROAD BAND VERTICAL EARTH NOISE

1. Method of Analysis

Each one hour noise sample was selected from digital VLPE recordings free of seismic events. Root-mean-square (RMS) ground motion amplitudes, $m\mu$ (i.e. corrected for instrument response) were determined for three period bands of 17 to 25 seconds, 20 to 40 seconds, and 30 to 40 seconds. The 20-40 second band is intended to show long term gross trends while the 17-25 and 30-40 second bands are intended to show contrasts and variability of the trends.

2. Results

Figure III-1 shows the RMS amplitude (mμ) in the 20-40 second period band versus Julian day (1972-1973) for stations CTA, CHG, EIL, KON, KIP, ALQ, ZLP, and MAT. CHG, KIP, KON, and ALQ had data for most of the 90 day time period (November, December 1972, and January 1973) studied. Stations CTA, EIL, ZLP, and MAT could be sampled only intermittently due to data being unavailable or unreadable.

In general, we observe a relatively stable low level of noise at most stations with the exception of CHG which had high and variable noise levels during November and December 1972. At all stations RMS amplitudes are observed to rise above the base level by factors of four to five over a one to two day period and then return to the base level. Based on the past data (Alsup and Becker 1973 a) and these data, it appears that there are slowly changing long term seasonal variations in the noise fields at most VLPE sites, although nothing definitive can be said at this time.

Figures III-2 and III-3 show the RMS amplitude (mμ) for the 17 to 25 second and 30 to 40 second period bands versus Julian day (1972 and 1973). The dot represents the 17 to 25 second period band and the triangle denotes the 30 to 40 second period band. Availability of data was the same as for the 20 to 40 second period band discussed above. We observe the following:

- The RMS amplitudes (mμ) in the 30 to 40 second period band are less variable and on the average two to four times lower than the RMS amplitudes (mμ) in the 17 to 25 second period band.
- Generally, RMS amplitudes do not increase or decrease in unison between period bands over short periods of time. This suggests that the noise in these two period bands is relatively uncorrelated.

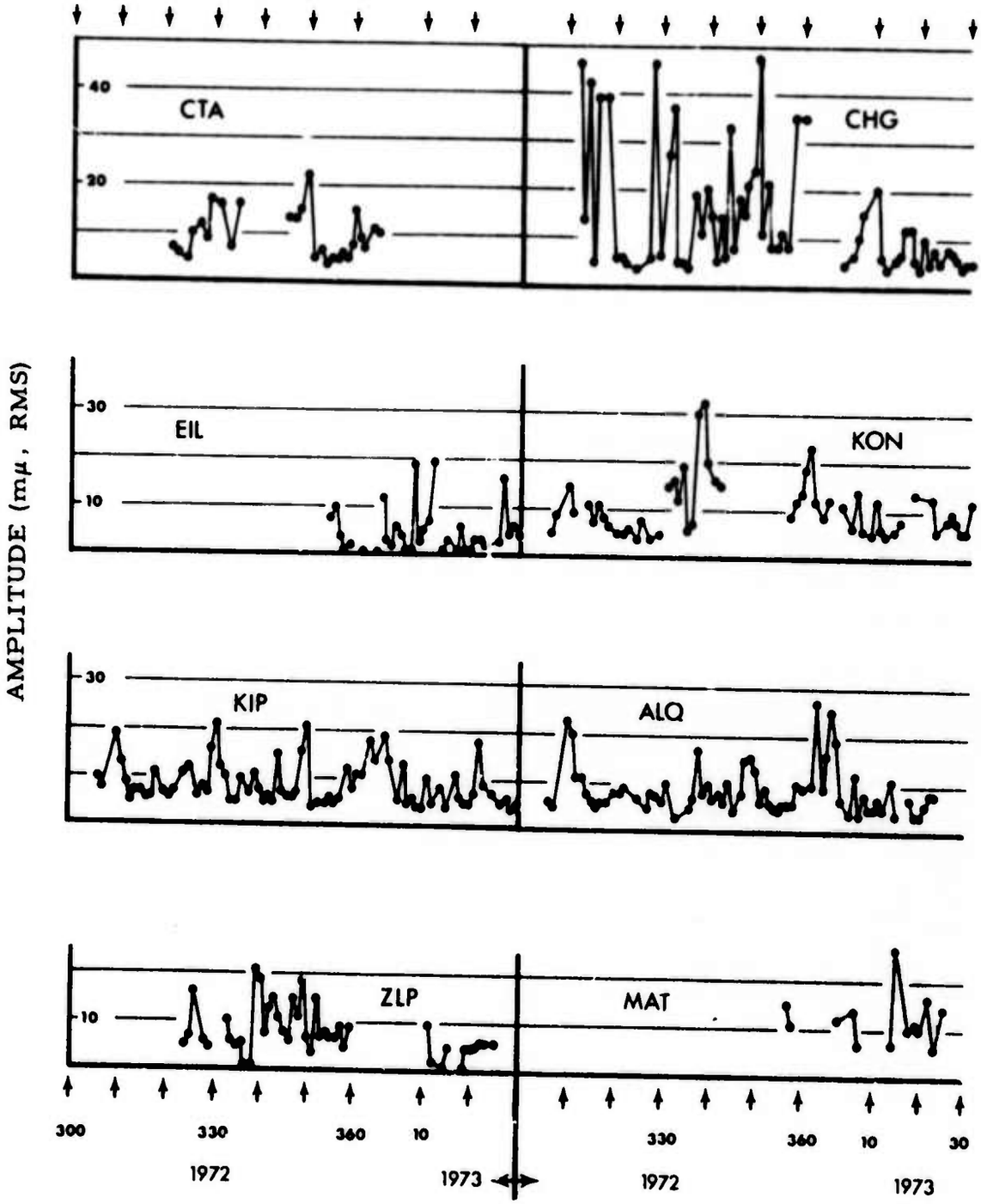


FIGURE III-1

VERTICAL GROUND NOISE AMPLITUDE AT
VLPE STATIONS AT 20-40 SECONDS

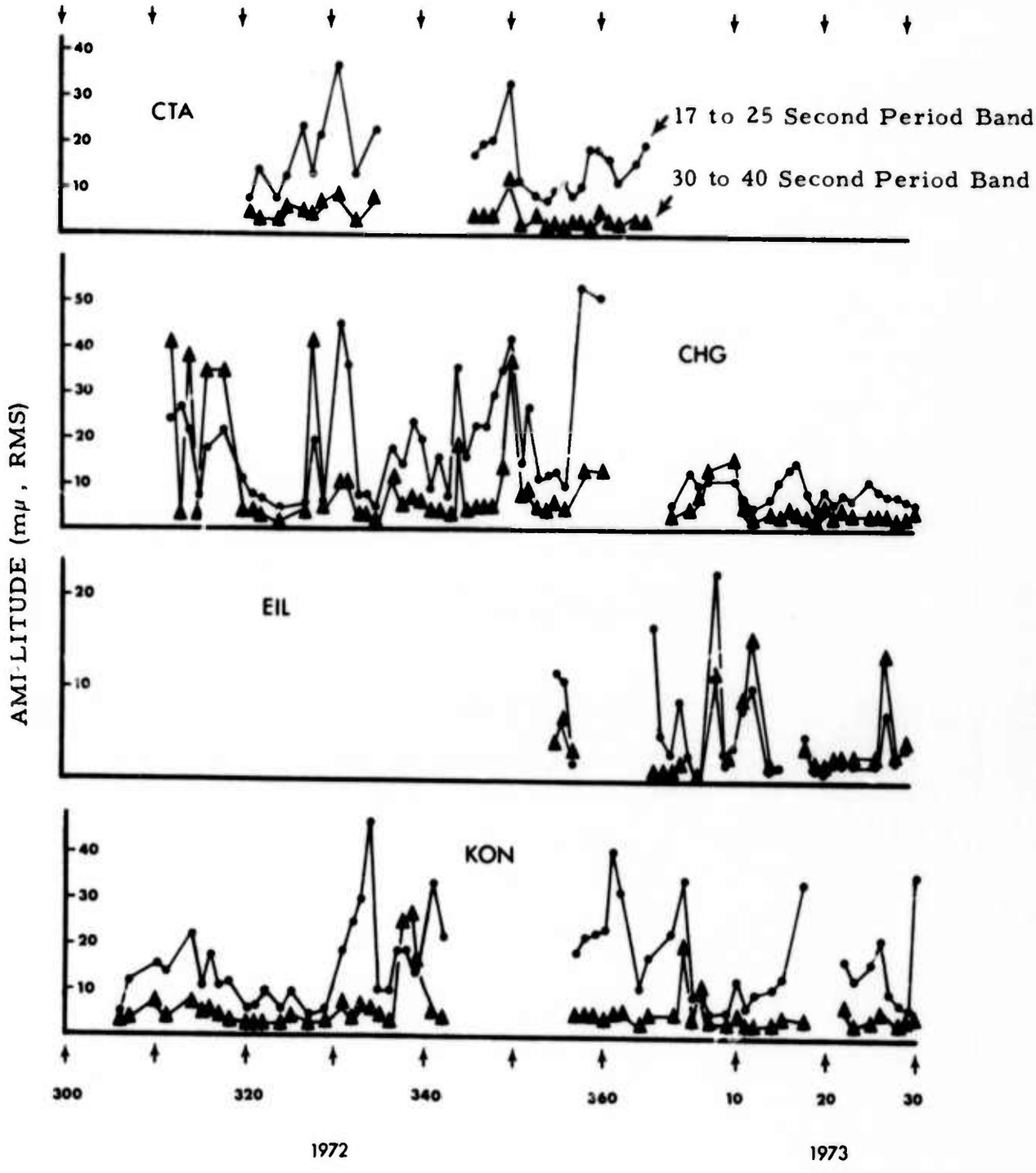


FIGURE III-2

VERTICAL GROUND NOISE AMPLITUDE AT VLPE STATIONS
AT 17-25 AND 30-40 SECONDS

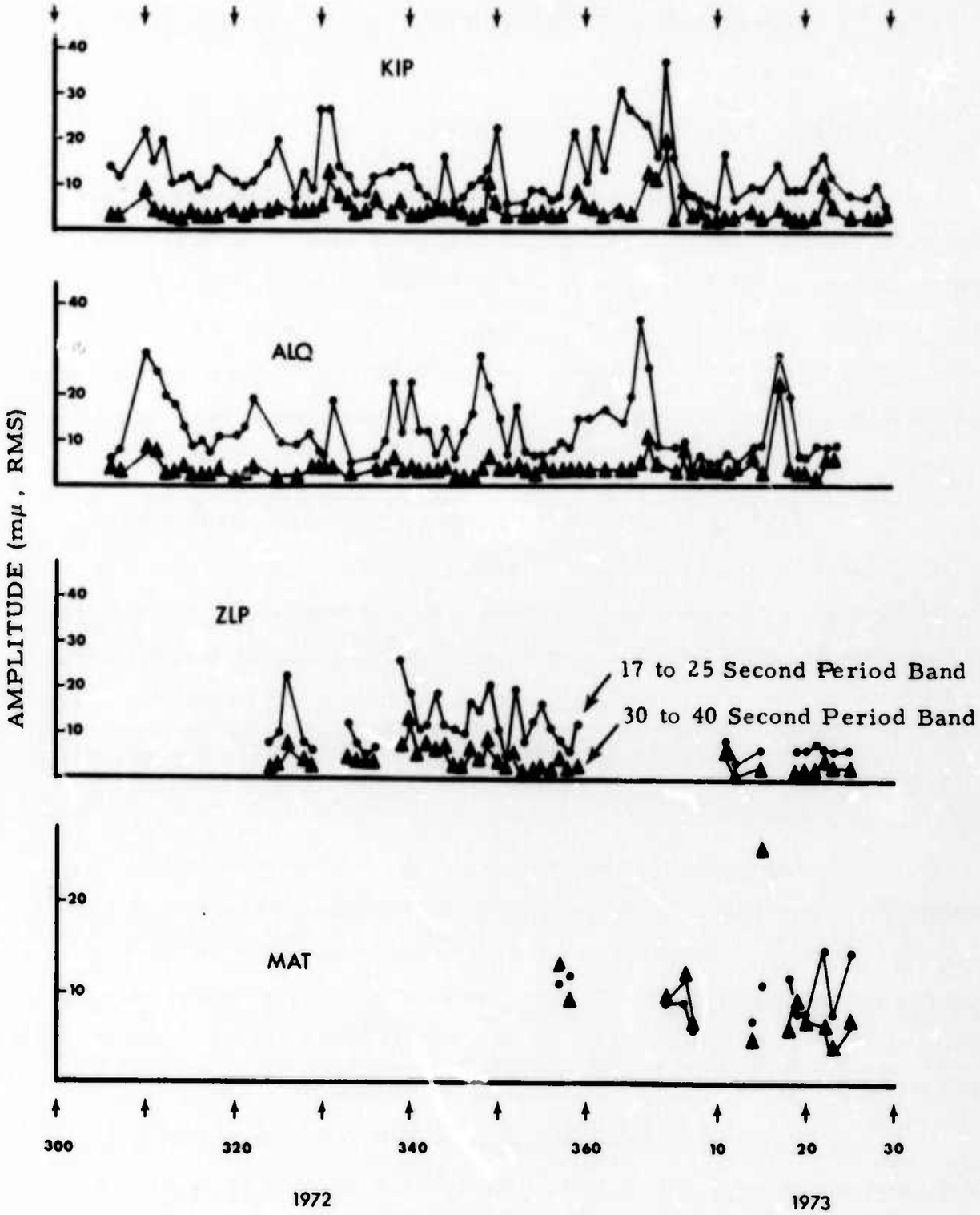


FIGURE III-3

VERTICAL GROUND NOISE AMPLITUDE AT VLPE STATIONS
AT 17-25 AND 30-40 SECONDS

- Correspondence between 20 to 40 second and 30 to 40 second period bands is observed at all stations.

C. MAXIMUM TRACE AMPLITUDE VERSUS RMS AMPLITUDE

Maximum zero to peak noise trace amplitudes versus RMS amplitude in period bands of 17 - 25, 20 - 40, and 30 - 40 seconds were determined in the following manner. One hundred seventy, one hour noise samples from March and November of 1972 were bandpass filtered in the period bands described above and then RMS amplitudes were computed and the maximum zero-to-peak (ZP) trace amplitudes were measured within the same period bands.

Table III-1 lists the ZP/RMS amplitude ratios (uncorrected for instrument response) and their standard deviations for each station. Figure III-4 shows the relationship between the bandwidth over which the RMS amplitudes were determined and the ZP/RMS amplitude ratios. An increase in the bandwidth yields an increase in the ZP/RMS amplitude ratio.

D THREE COMPONENT BROAD BAND EARTH NOISE

1. Discussion

Simultaneous three component earth noise structure at VLPE stations was reported by Alsup and Becker (1973b) for 491 hours of noise sampling. Times and stations covered were the same as for the vertical earth noise mentioned above. This report includes supplementary data on stations not covered by Alsup and Becker. Total hours of data examined from each station studied are listed in Table III-2.

One hour samples of the noise field from the vertical, north-south, and east-west VLPE digital output recordings were analyzed in a manner similar to the vertical earth noise study mentioned above. This data is displayed as average values of RMS ground motion of each component

STATION	MAX Z-P AMP / RMS AMP (ΔT=30-40)	MAX Z-P AMP / RMS AMP (ΔT=20-40)	MAX Z-P AMP / RMS AMP (ΔT=17-25)	NUMBER OF SAMPLES
CTA	5.06 ± 1.49	6.72 ± 2.78	5.36 ± 2.58	16
CHG	4.63 ± 1.51	6.09 ± 2.42	5.01 ± 1.57	21
FBK	3.47 ± 1.02	4.54 ± 1.73	4.10 ± 1.49	20
KON	3.40 ± 1.00	4.01 ± 1.25	3.75 ± 1.02	43
OGD	4.04 ± 1.31	5.31 ± 2.64	4.76 ± 2.03	13
KIP	3.38 ± 0.79	4.05 ± 1.29	3.60 ± 1.08	26
ALQ	3.57 ± 0.95	4.37 ± 1.13	4.08 ± 1.38	22
ZLP	4.03 ± 1.64	5.93 ± 3.00	5.10 ± 2.31	9
AVERAGE	3.82 ± 1.27	4.84 ± 2.08	4.27 ± 1.65	170

TABLE III-1

ZERO TO PEAK AMPLITUDE VERSUS RMS AMPLITUDE FOR VLPE STATIONS

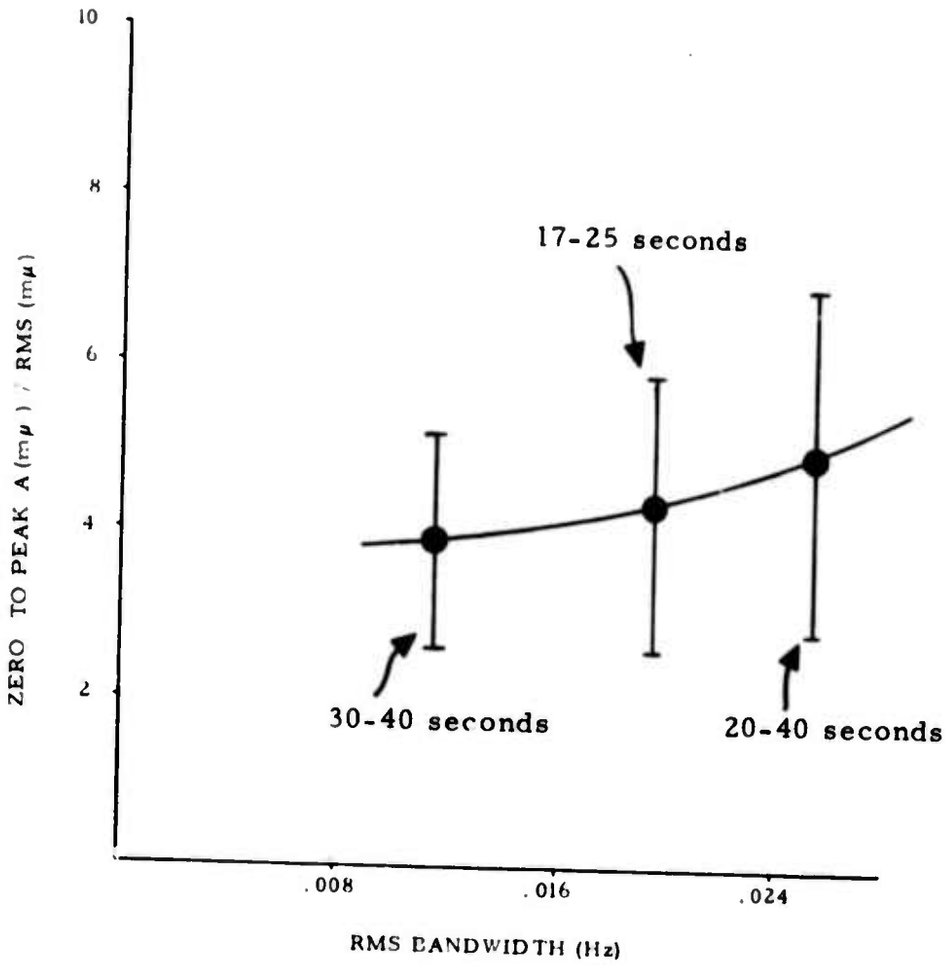


FIGURE III-4

MAXIMUM ZERO TO PEAK TRACE AMPLITUDE/RMS AMPLITUDE AS A FUNCTION OF BANDWIDTH

TABLE III-2

VERY LONG PERIOD EXPERIMENT (VLPE) STATIONS AND LOCATIONS

Station	Designator	Latitude	Longitude	Number of Samples
Eilat, Israel	EIL	29.55N	34.95E	18
Albuquerque, New Mexico	ALQ	34.94N	106.46W	66
La Paz, Bolovia	ZLP	16.50S	68.13W	38
Matsushiro, Japan	MAT	36.54N	138.21E	11

versus frequency. Intercomponent correlation of each component for each station was also calculated.

2. Vertical and Horizontal Noise Spectra

Mean RMS ground motion amplitudes for simultaneous vertical and horizontal noise are shown in the left half of Figures III-5 through III-8. The symbols indicate the average of RMS values observed at each location. The means and standard deviations for the RMS calculations are also given in Appendix III-A.

Generally the horizontal component displays similar characteristics to those seen in the vertical noise field. The lowest ground noise levels are in the 25-40 second range. A microseismic peak is clearly evident in all stations (except EIL) at the approximately 17 second period. The horizontal noise is more variable and greater in magnitude than the vertical noise at periods greater than 30-35 seconds. Stations FIL and MAT deviate slightly from the normal spectra of other stations. This could reflect either a recording difficulty at the times these data were recorded or a lack of data.

Conversion from RMS amplitude to log amplitude plots of the noise data was justified by Alsup and Becker (1973b) because the distribution of the logarithmic data closely approximates a normal distribution. Log amplitude plots are displayed on the right half of Figures III-5 through III-8. The means and standard deviations of these data are also given in Appendix III-B. Included on the log amplitude plots are flags of the standard deviations of the mean values. Variability of the log amplitude values is relatively constant across the bandwidth.

3. Intercomponent Noise Correlation

Interchannel cross correlations as a function of period are shown in Figures III-9 and III-10. The cross correlations between each channel pair (Z-vertical channel, N-north south channel, and E-east west

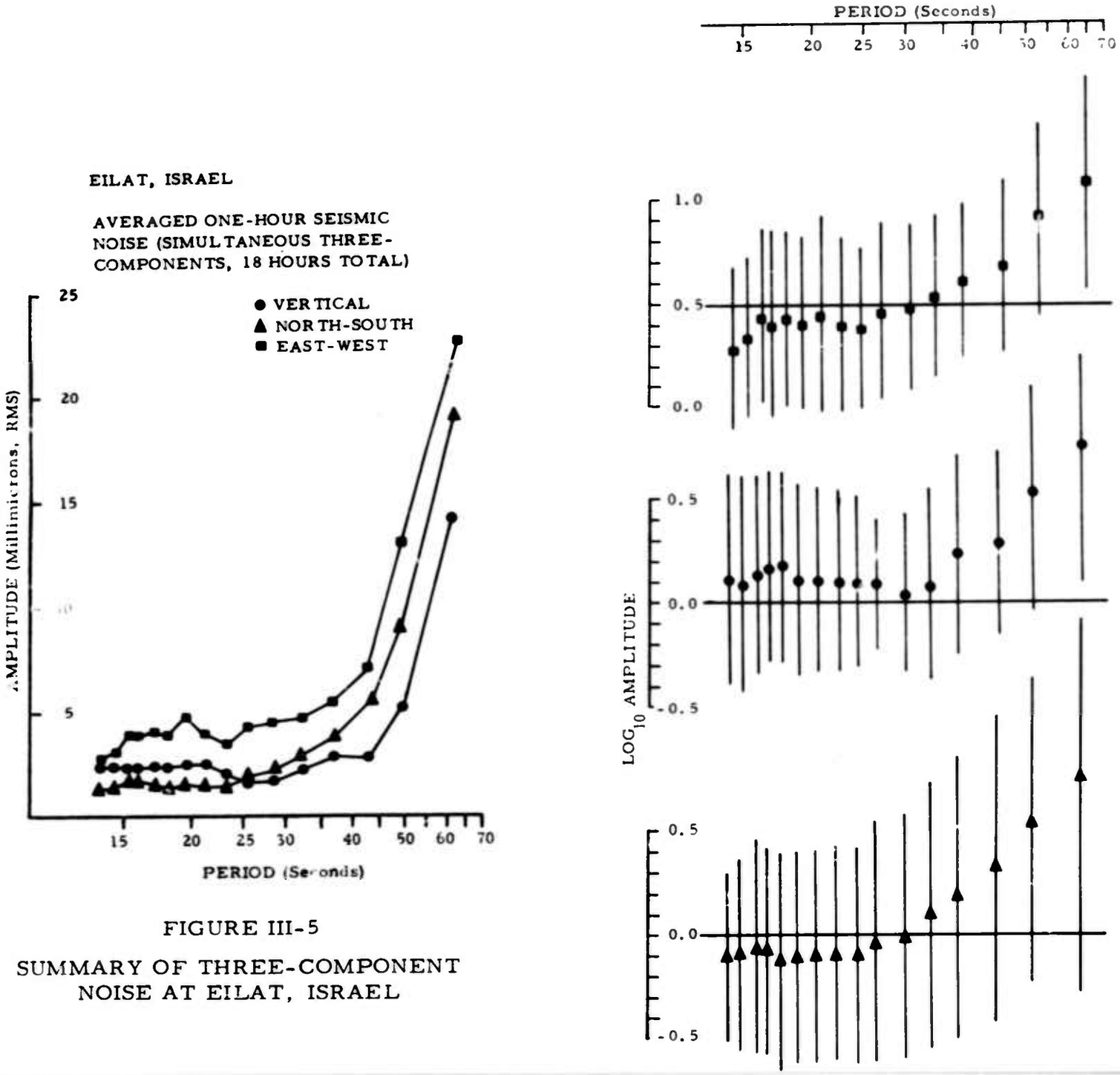


FIGURE III-5

SUMMARY OF THREE-COMPONENT NOISE AT EILAT, ISRAEL

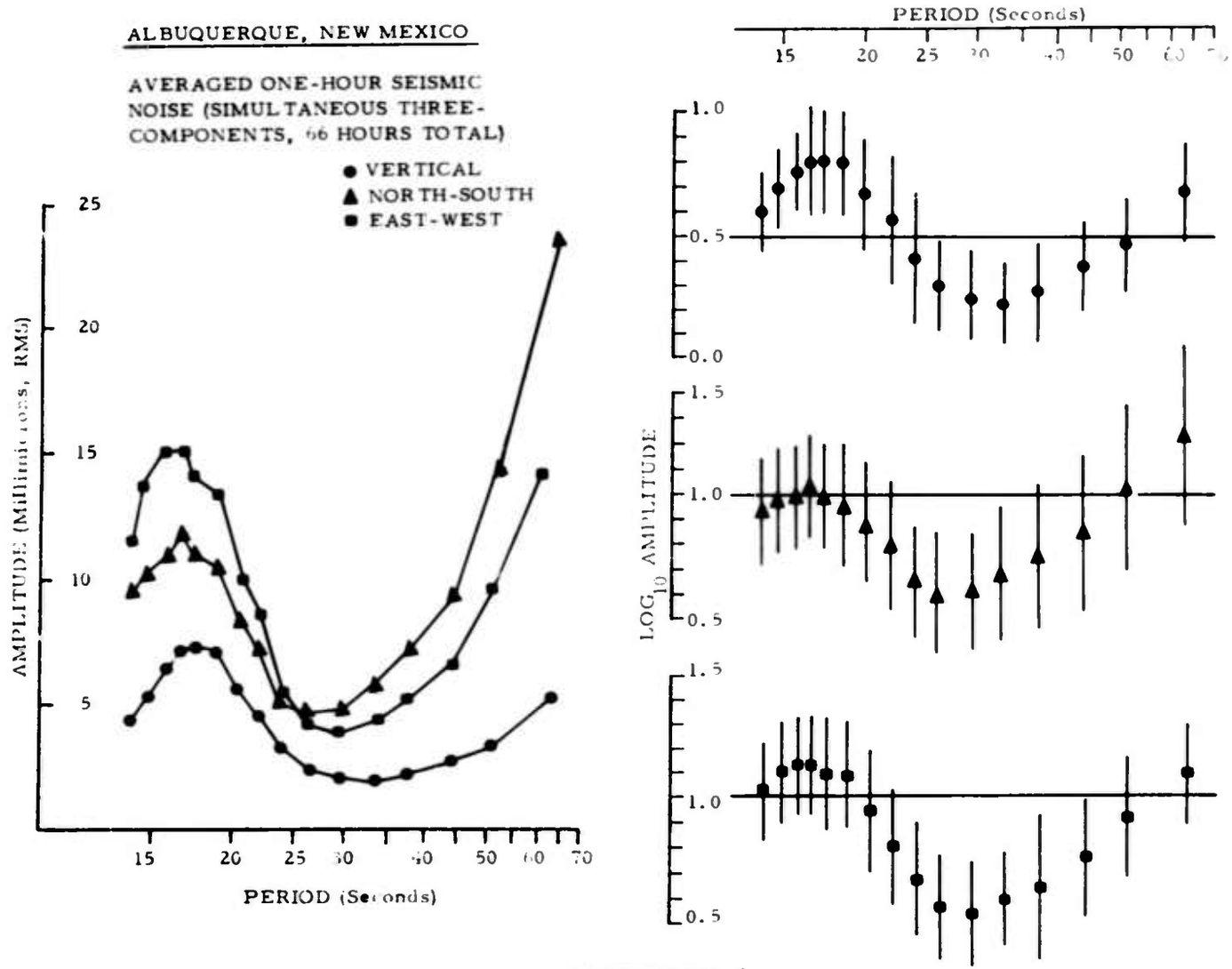


FIGURE III-6

SUMMARY OF THREE-COMPONENT NOISE AT ALBUQUERQUE, NEW MEXICO

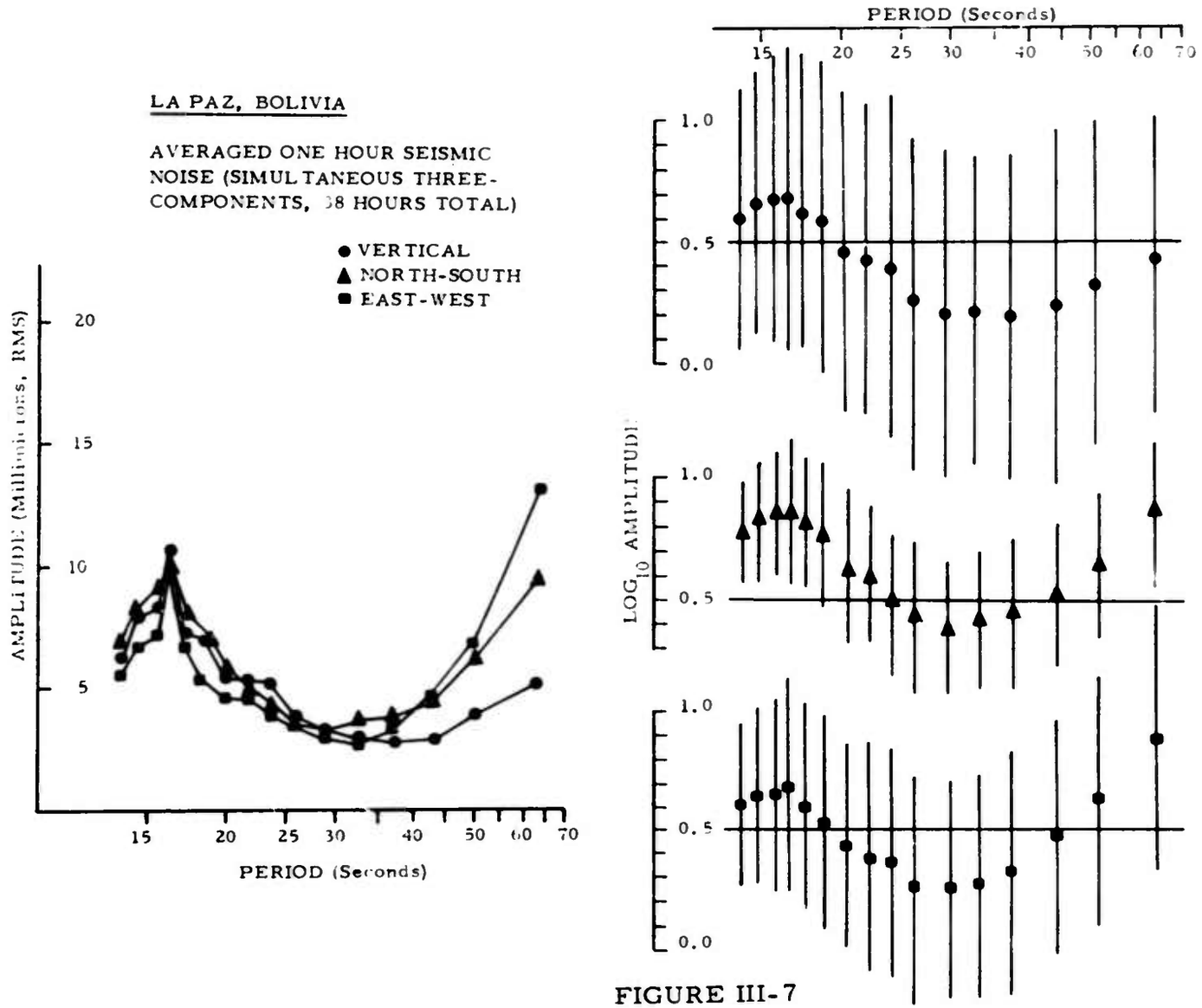


FIGURE III-7

SUMMARY OF THREE-COMPONENT NOISE AT LA PAZ, BOLIVIA

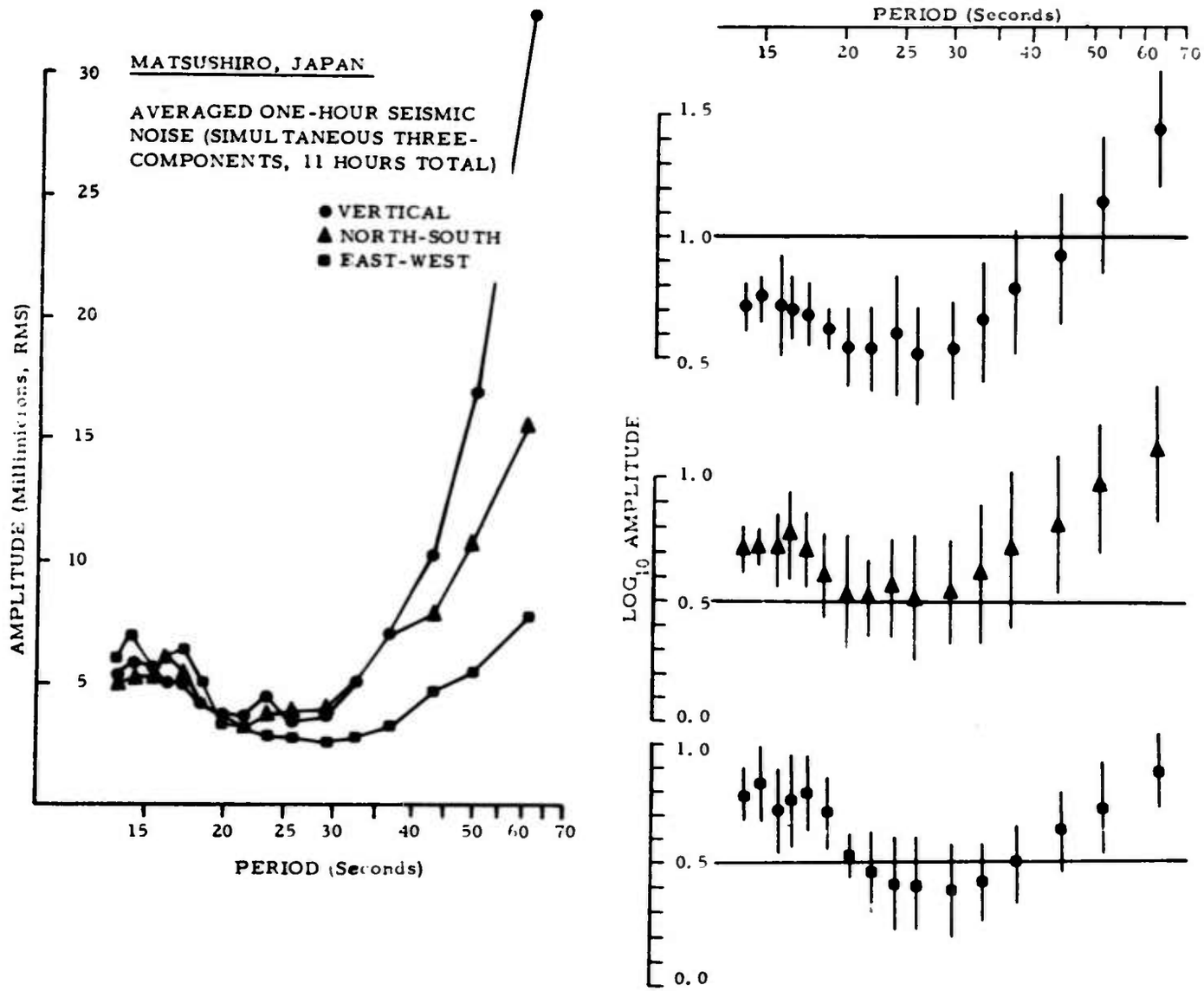


FIGURE III-8

SUMMARY OF THREE-COMPONENT NOISE AT MATSUSHIRO, JAPAN

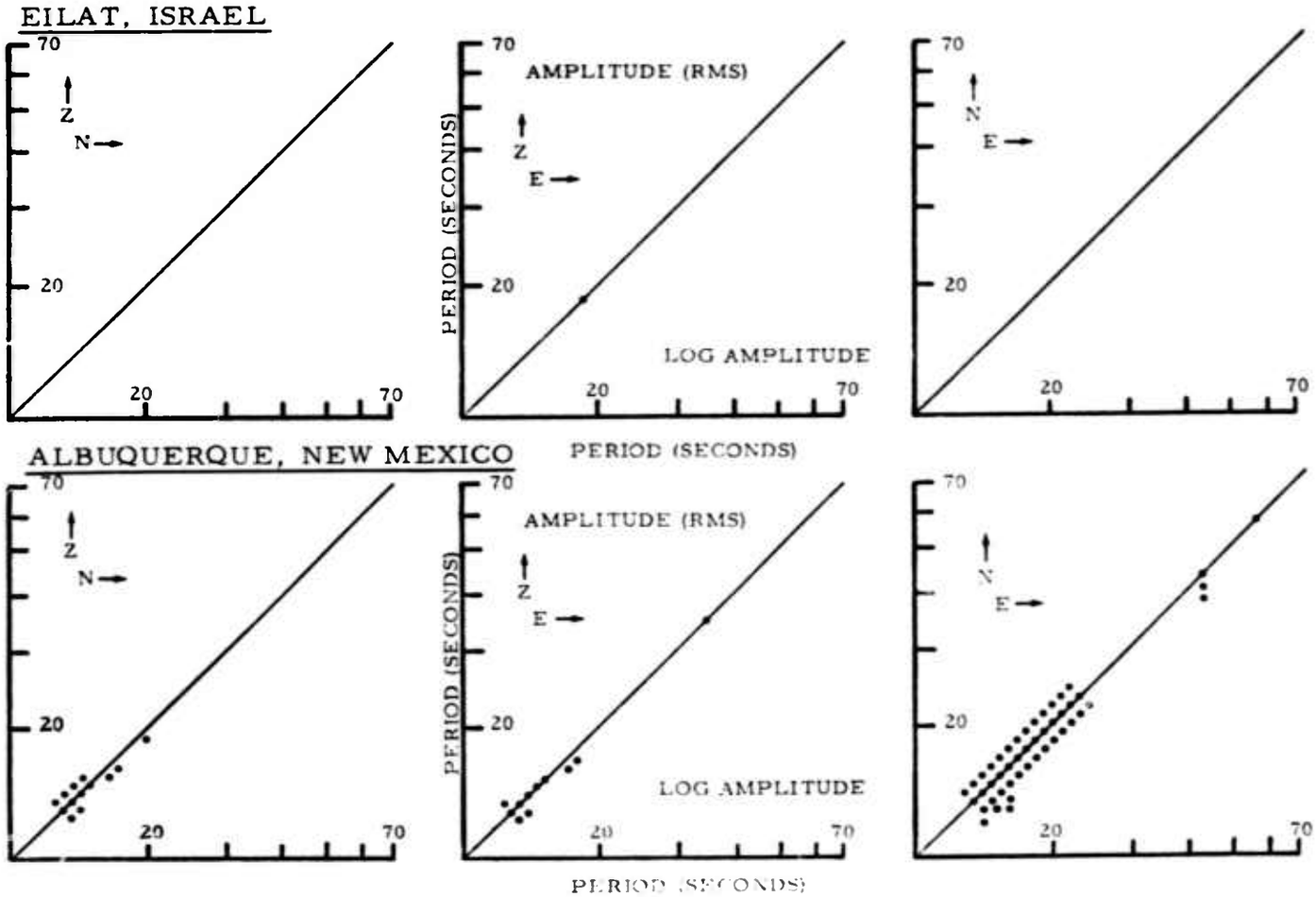


FIGURE III-9

INTERCHANNEL NOISE CROSS CORRELATION AT VLPE STATIONS. LINEAR COEFFICIENT OF CORRELATION: BLANK (LESS THAN .70) AND STIPPLED (GREATER THAN .70).

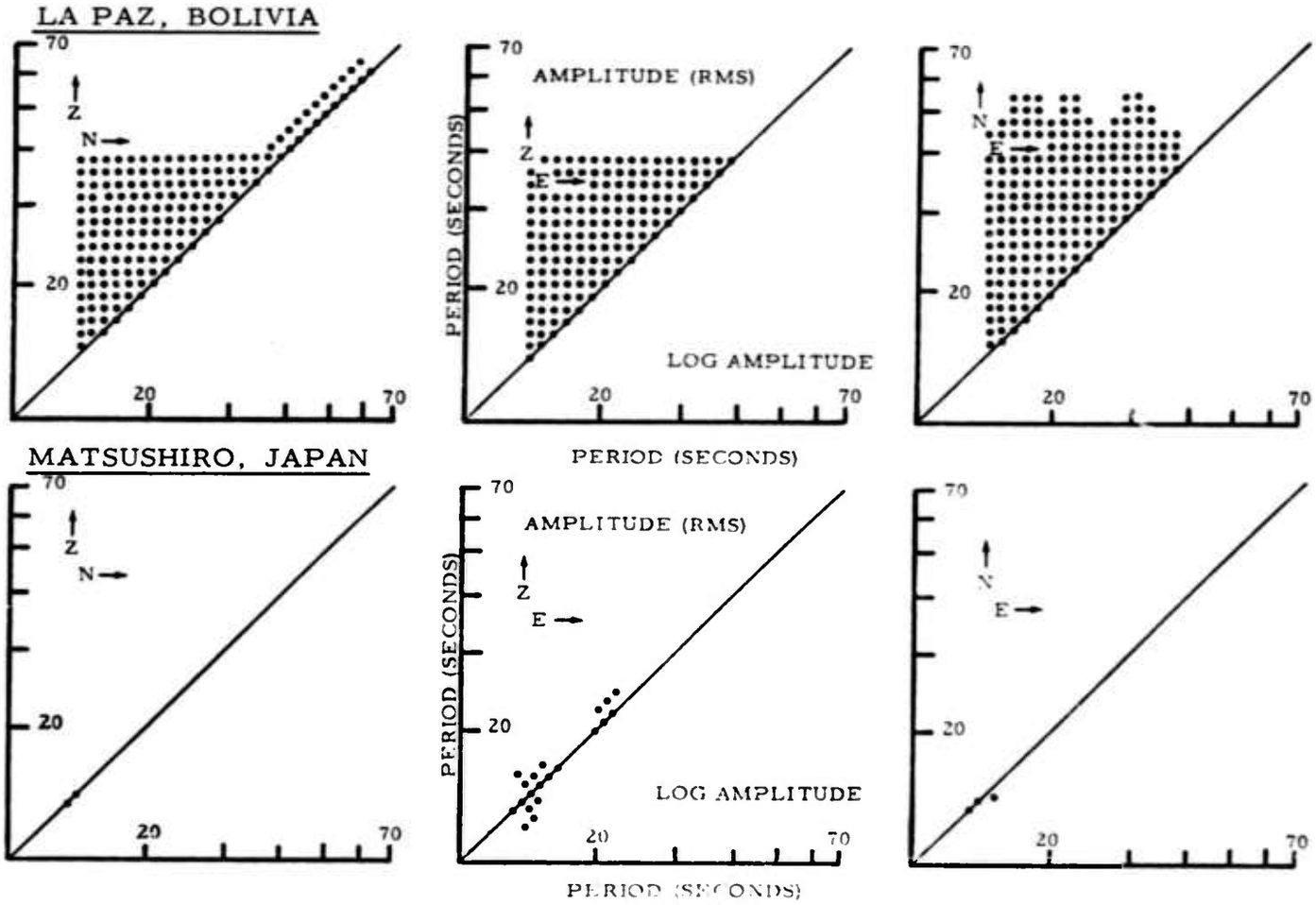


FIGURE III-10

INTERCHANNEL NOISE CROSS CORRELATION AT VLPE STATIONS. LINEAR COEFFICIENT OF CORRELATION: BLANK (LESS THAN .70) AND STIPPLED (GREATER THAN .70).

channel) are shown. The RMS amplitude correlations are displayed in the upper left half of each plot and the log amplitude correlations in the lower right half. The basic correlation data also are given in Appendix III-C and III-D. Weak to moderate correlation in the period band of 14.3 to 21.3 seconds is seen between all channels at ALQ and MAT. This might be related to the microseismic peak which occurs at the 17-20 second period. In general correlation is weak except at location ZLP. Considering the standard deviations of the RMS amplitudes of this location the high correlations must have resulted from poor data. The cross correlation study points out that each channel must be treated separately in any attempt to improve detection capability.

E. SUMMARY

Data from vertical and simultaneous three component noise samples from VLPE sites show the following:

- The presence of a "stable noise minimum" is evident in the approximate period range of 22-35 seconds.
- At most VLPE sites a microseismic peak is present in the 17-20 second period range.
- There is a levelling off of the vertical and horizontal noise field at periods below the microseismic peak while at periods above 30-35 seconds great variability in the horizontal noise field is present relative to the vertical noise field.
- Seasonal variations in the vertical noise fields are suggested by the slowly changing long term nature of the vertical noise fields.
- Intercomponent frequency dependent cross correlation of the RMS amplitudes is rarely present but when present, it occurs

only at the same periods on both correlated components. Despite this occasional correlation, we interpret this to mean that in general noise on one component is independent of noise on the other two.

A larger and more continuous data base is needed before conclusive statements can be made about the seasonal variations in the noise field. Stations EIL, ZLP, and MAT should be studied in greater detail.

SECTION IV
VLPE DETECTION CAPABILITY

A. INTRODUCTION

In this section, we present the results of various processing and analysis techniques as they apply to the detection capabilities of the VLPE.

The results of estimating detection capabilities utilizing the maximum likelihood procedure is given in part B. Part C discusses the effects of the VLPE network on events classified as "mixed events" at single VLPE sites, and Part D gives the results of the application of Matched Filters (Chirp and Master waveform) and the Three Component Adaptive Processor to events located in Central Asia.

B. MAXIMUM LIKELIHOOD ESTIMATES OF DETECTION CAPABILITY

1. Discussion

We present the results of estimating the surface wave detection capabilities for eleven individual VLPE stations and three VLPE networks.

The three VLPE networks considered are as follows: Network 1, includes the January 1 through March 20, 1972 ensemble of events. Network 2, includes the June 1 through August 31, 1972 ensemble of events, and Network 3 includes the November 1 through December 31, 1972 ensemble of events. Stations and data for these networks were previously described in Section II-B.

The method of estimating detection capabilities utilized here is based on a maximum-likelihood procedure, which has been described in detail by Ringdal, 1974. Briefly this method assumes that the probability

of detecting an event of magnitude m may be described as a cumulative Gaussian probability integral.

$$(1) \quad P(\text{Detect } m) = (2\pi\sigma^2)^{-\frac{1}{2}} \int_{-\infty}^{m} e^{-\frac{(t-\mu)^2}{2\sigma^2}} \, dt$$

Given a set of decisions detection versus no detection for events of various magnitudes, the procedure ther is to find the mean and standard deviation values (μ, σ) that maximizes the probability of the obse:ved pattern of detections/no detections occurring. The reliability of the detection capability estimate is of course, limited by the quality and quantity of the observed data; a specific discussion of the assumptions and limitations to the method is given by Ringdal (1974).

The above model applies equally well to estimating detectability in terms of body-wave magnitudes and surface-wave magnitudes. In the VLPE case, it would be desirable to express detection thresholds in terms of M_s values. However, we do not have reliable M_s estimates for all events in our data base. To use the average M_s value for all VLPE stations that detected each event would not be correct, as is illustrated in Figure IV-1, where VLPE M_s values are plotted versus NORSAR and ALPA M_s averages. It is seen that the VLPE values are biased high for low magnitude events; this is because only one or two of the better stations detect, and consequently the VLPE M_s estimate is based upon stations with larger than average amplitudes.

On the other hand, we have not been able to compute ALPA and NORSAR M_s values for all events in the data base. Thus, it has not been possible to use these two large arrays as references for this report; however, we plan to do this in our future studies. At this point it should be noted that NORSAR and ALPA give consistent M_s values for all magnitudes, and although the scatter is fairly large, NORSAR appears to show slightly higher values. (Figure IV-2)

For this report, we have thus been confined to give VLPE detection threshold estimates in terms of body-wave magnitudes. In order to convert these values to estimates based on M_s, it is not correct to apply

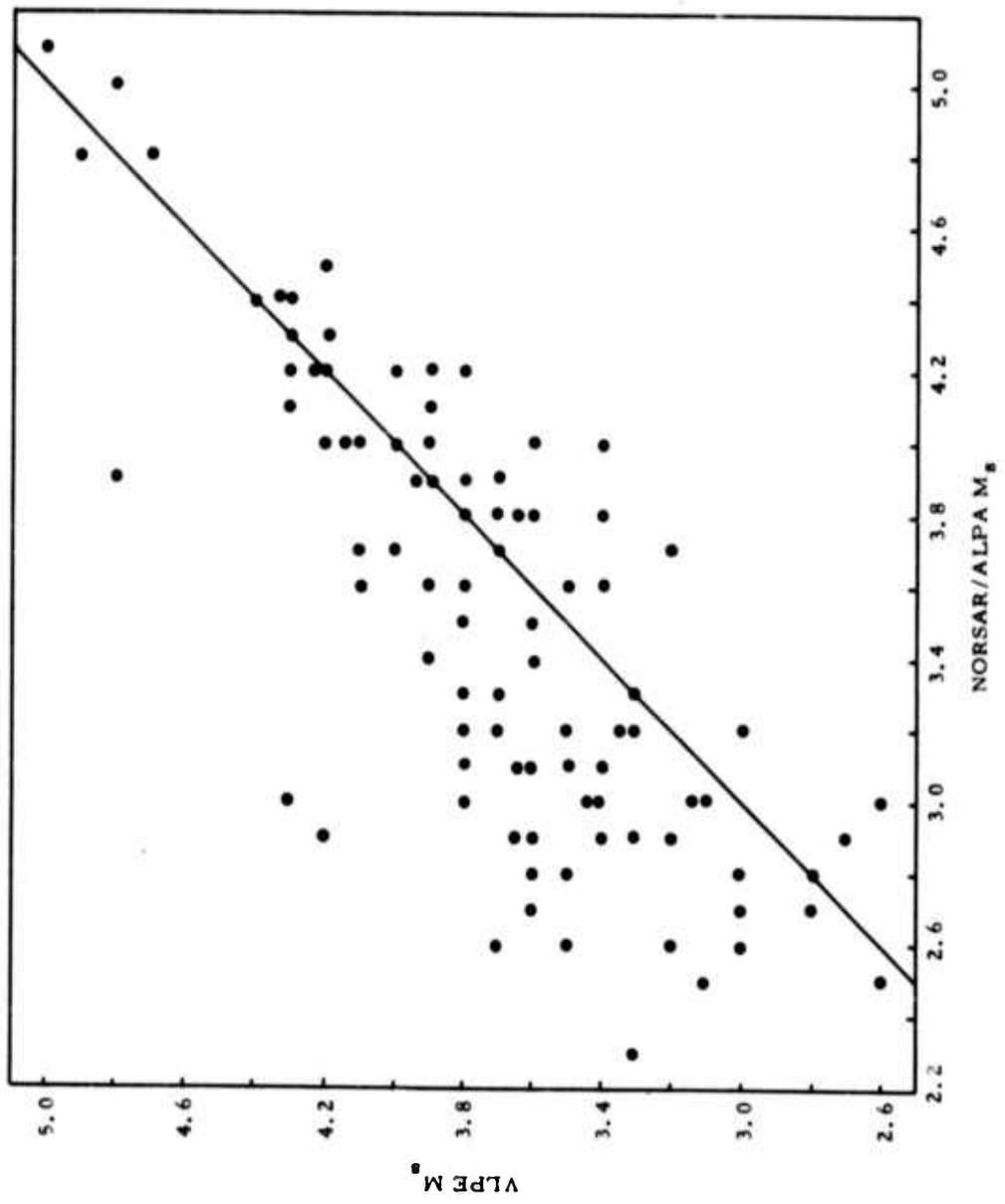


FIGURE IV-1

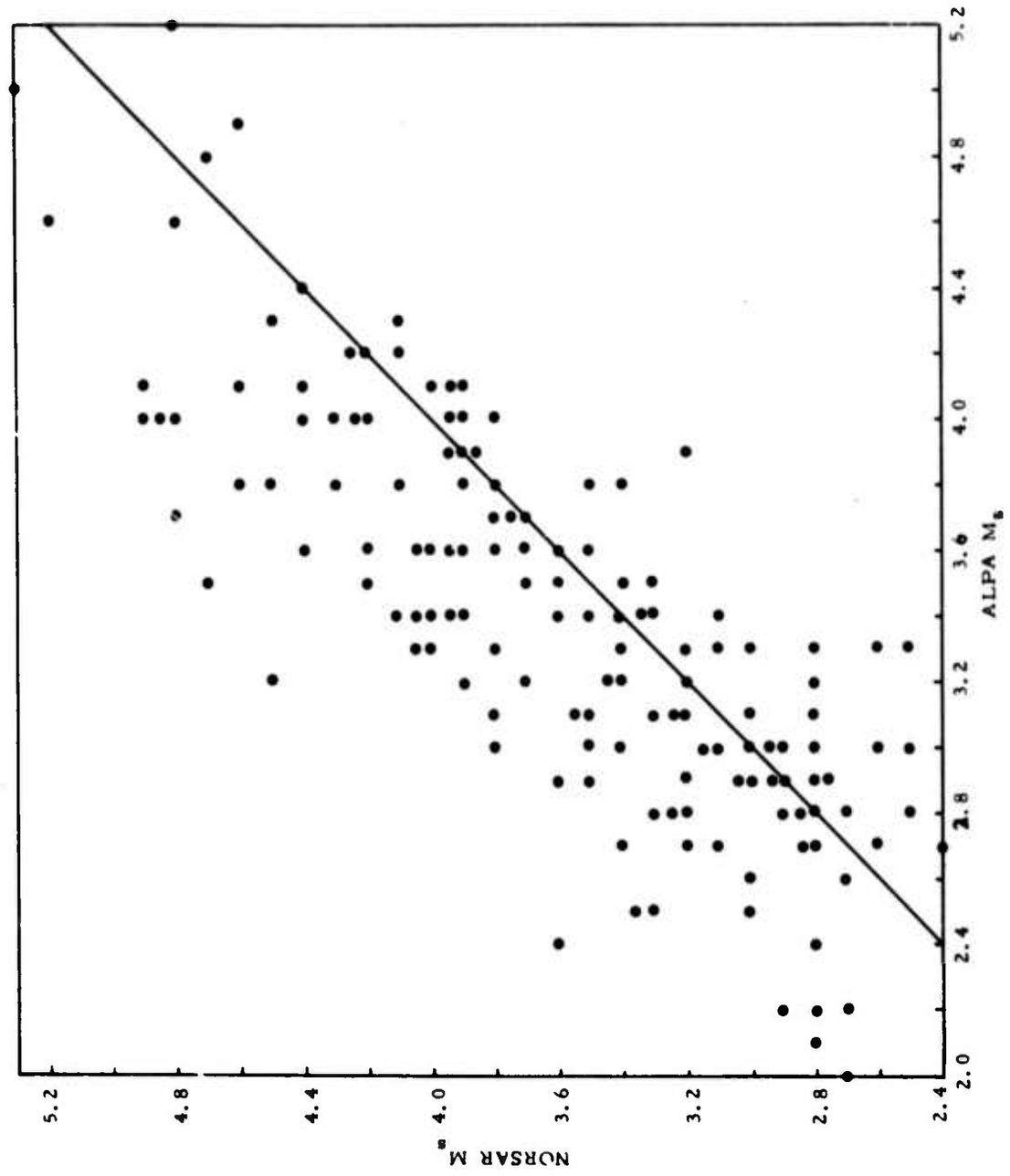


FIGURE IV-2

directly a linear M_s versus m_b relationship; we must also take into account the scattering in this correspondence. This has been pointed out by Harley and Heiting (Special Report No. 1, 1972), and independently by Lacoss (1971).

It is easily seen that the estimate of the 50 percent detection threshold μ is independent of this scattering effect, while the variance estimate σ^2 in (1) must be modified. Specifically, as pointed out by Lacoss (1971), if the variance in the M_s versus m_b relationship is σ_r^2 and the estimate of σ^2 based on m_b values is σ_m^2, then the corresponding estimate σ_M^2 for a detection curve based on M_s values will be

$$(2) \quad \sigma_M^2 = \sigma_m^2 - \sigma_r^2$$

In practical situations one must be careful when applying (2) since σ_r and σ_m sometimes will be almost equal, and the resulting σ_M value may thus be dominated by possible errors in the other two estimates.

2. VLPE Single Station Detection Capability

Maximum likelihood detection threshold estimation based on body-wave magnitudes was performed for each of 11 single VLPE stations. For each station, all events were included for which a decision detection versus no detection could be made. We deleted events occurring during any period of malfunctioning hardware, and we did not consider presumed explosions or events where interfering signals were present.

The results are presented in Figures IV-3 through IV-13. Fifty-percent detection estimates are given with reasonably good confidence ($\sigma < 0.1$ m_b units and more than 100 detection/no detection decisions) for the first nine stations, while for MAT and ZLP we obtained poor detection estimates due to the small number of detection/no detection decisions available.

The single station detectability estimates are summarized in

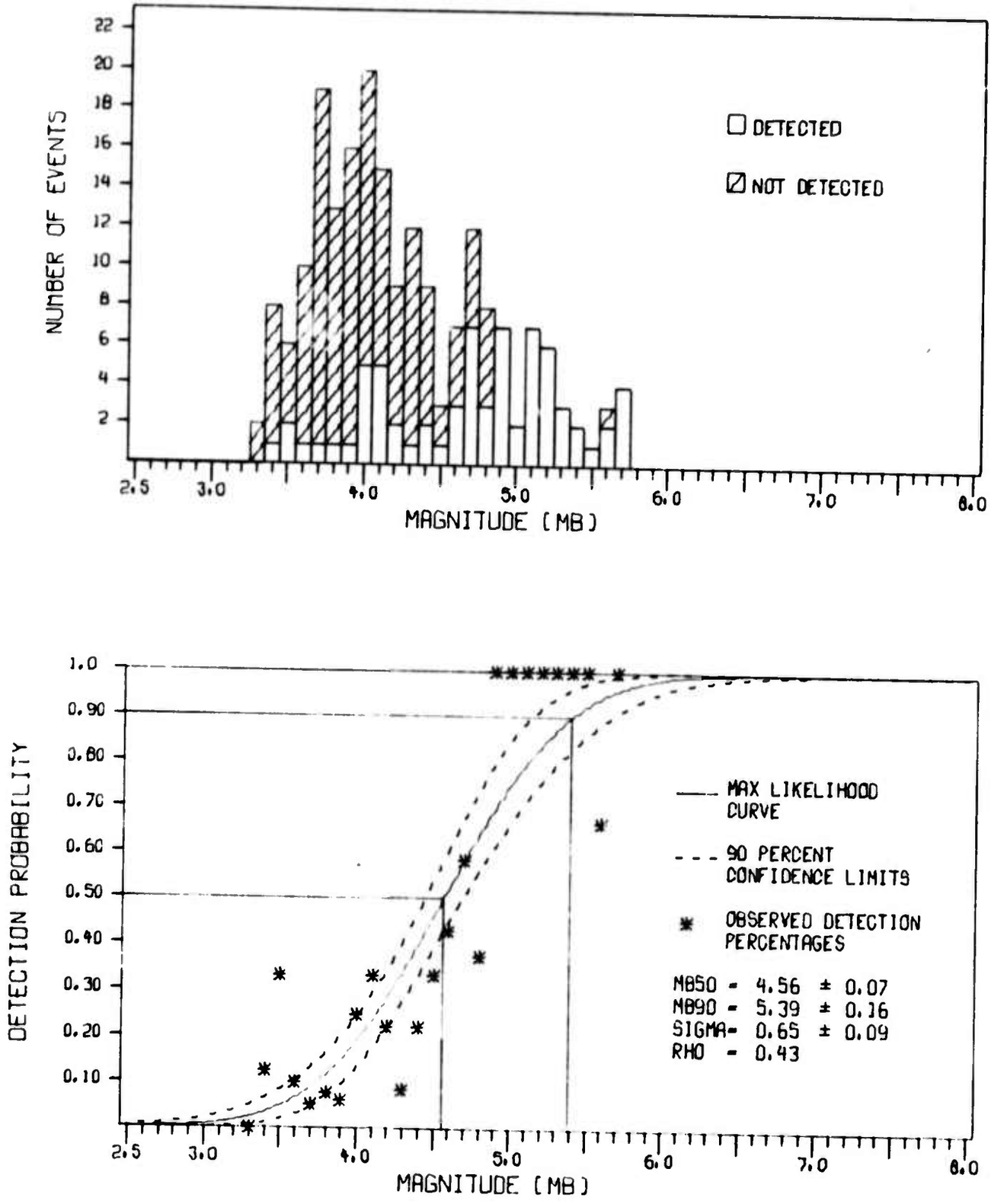


FIGURE IV-3

DETECTION STATISTICS FOR VLPE STATION 1 (CTA)

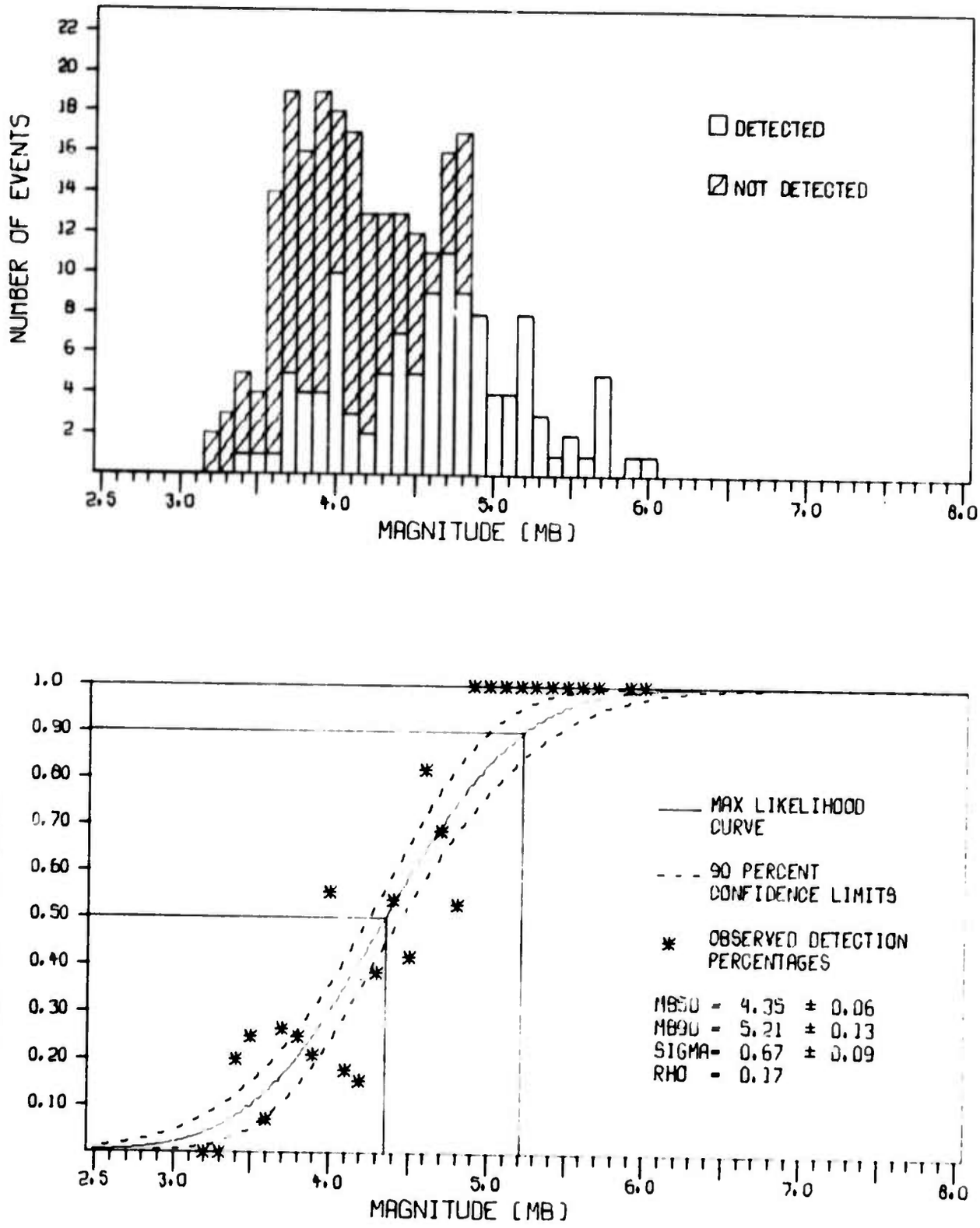
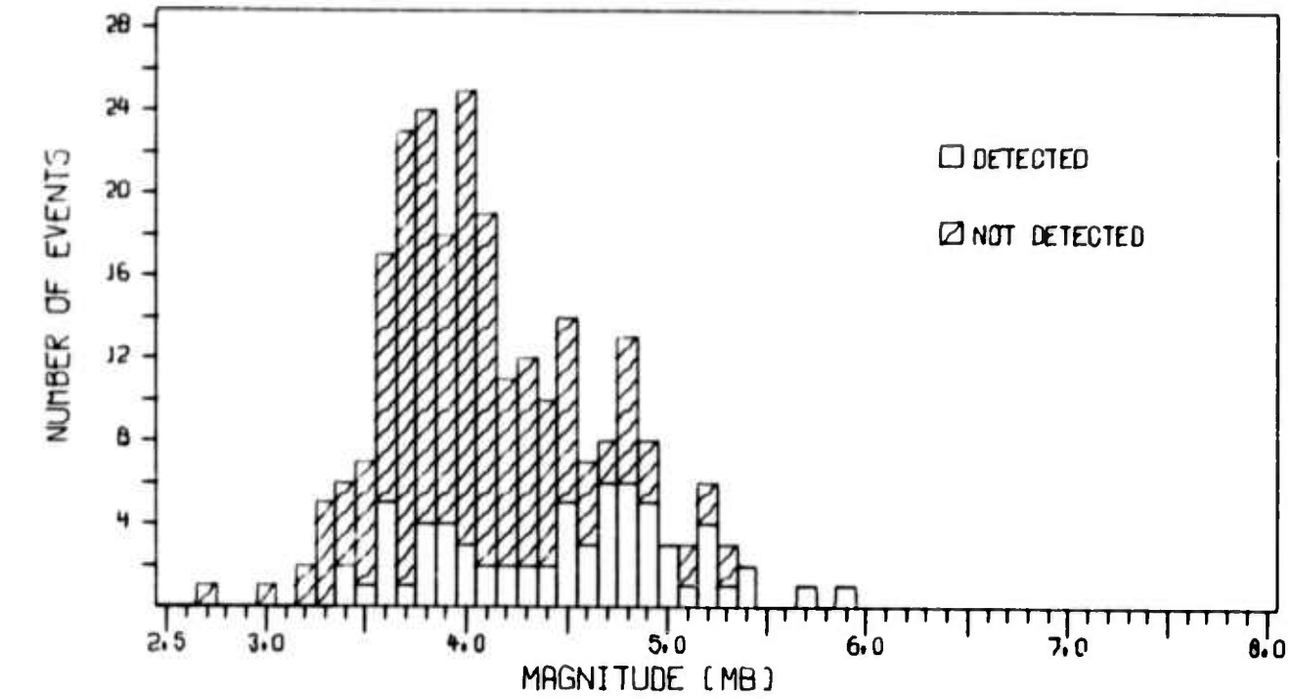


FIGURE IV-4

DETECTION STATISTICS FOR VLPE STATION 2 (CHG)



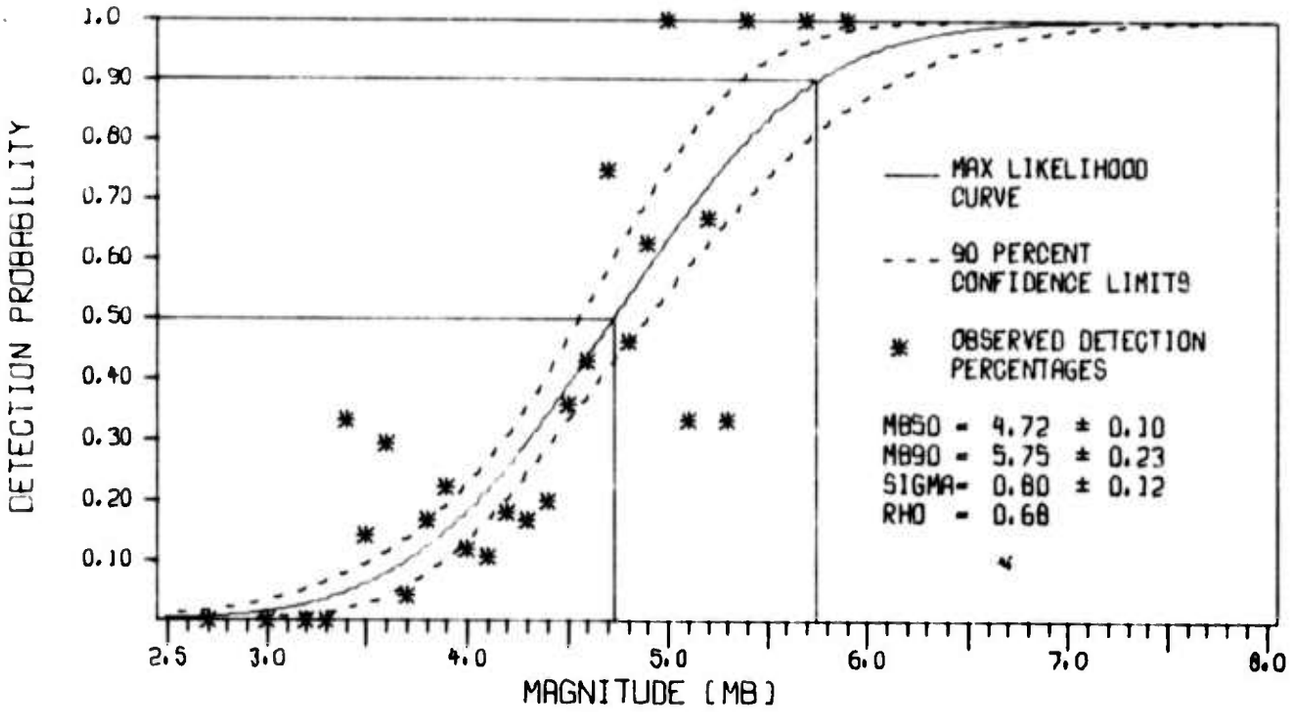
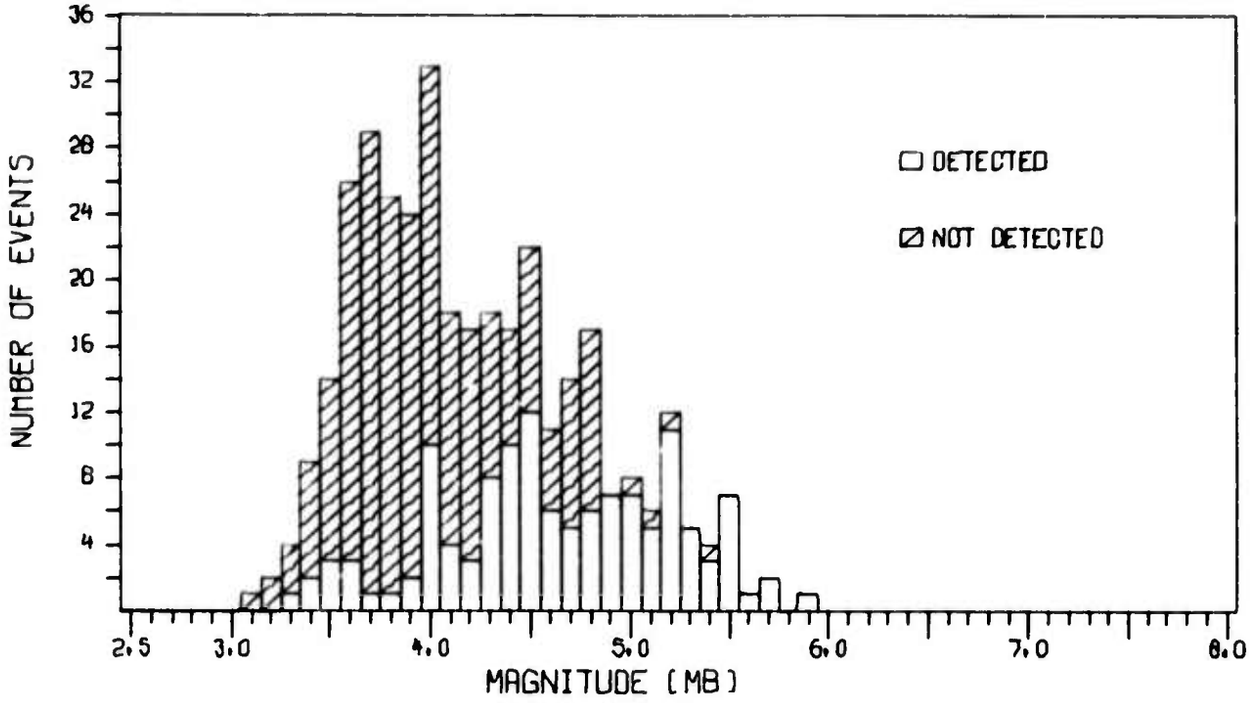


FIGURE IV-5

DETECTION STATISTICS FOR VLPE STATION 3 (FBK)



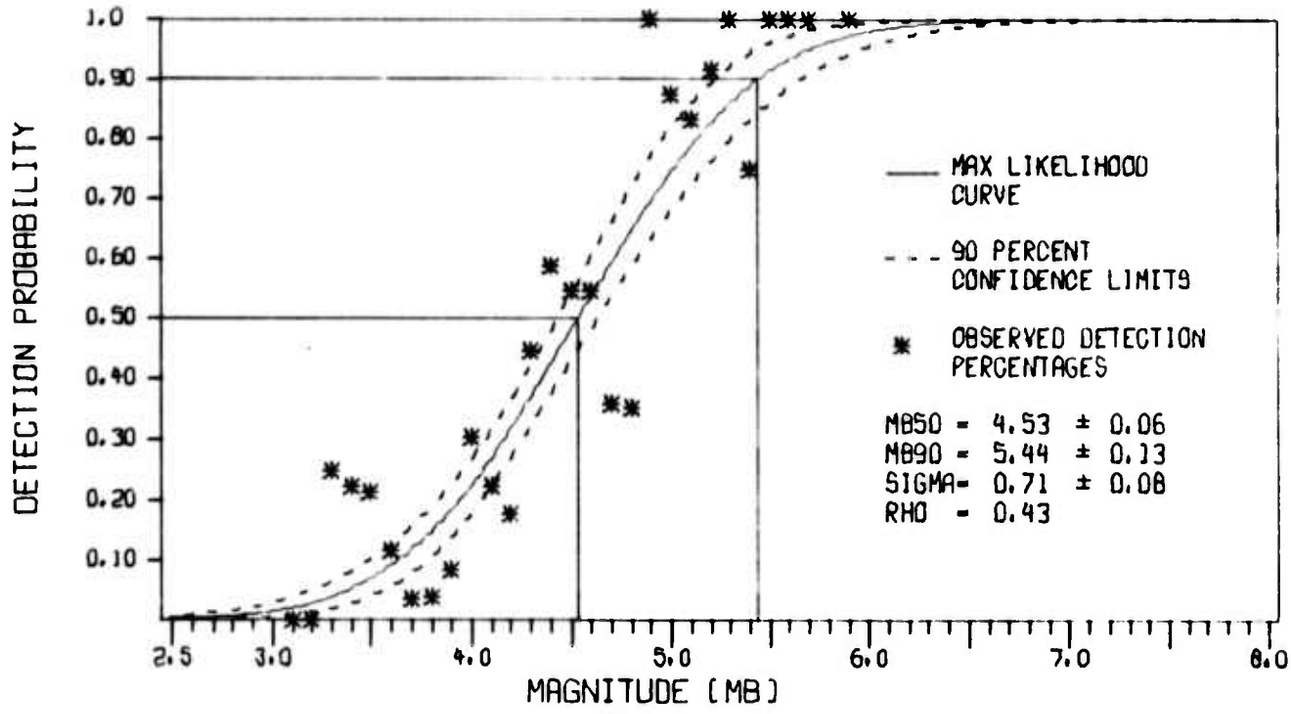


FIGURE IV-6

DETECTION STATISTICS FOR VLPE STATION 4 (TLO)

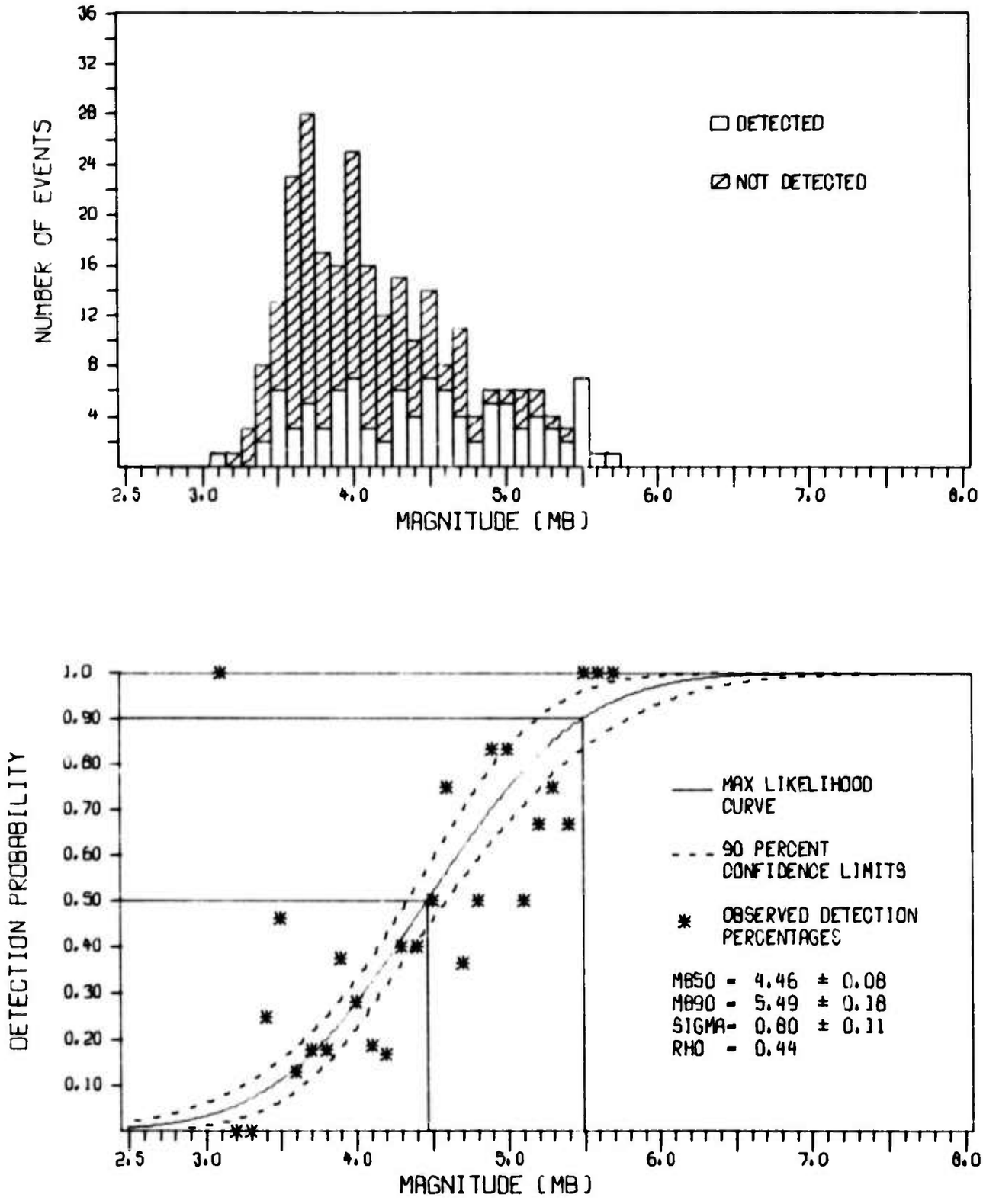
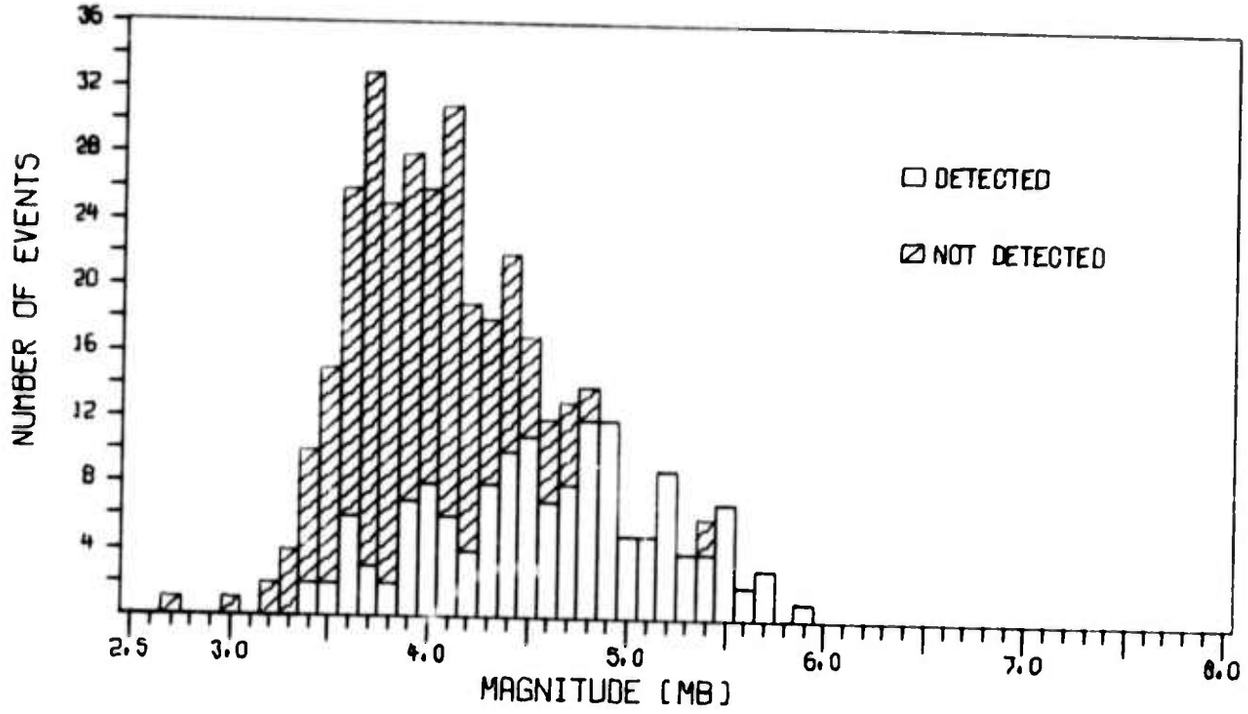


FIGURE IV-7

DETECTION STATISTICS FOR VLPE STATION 5 (EIL)



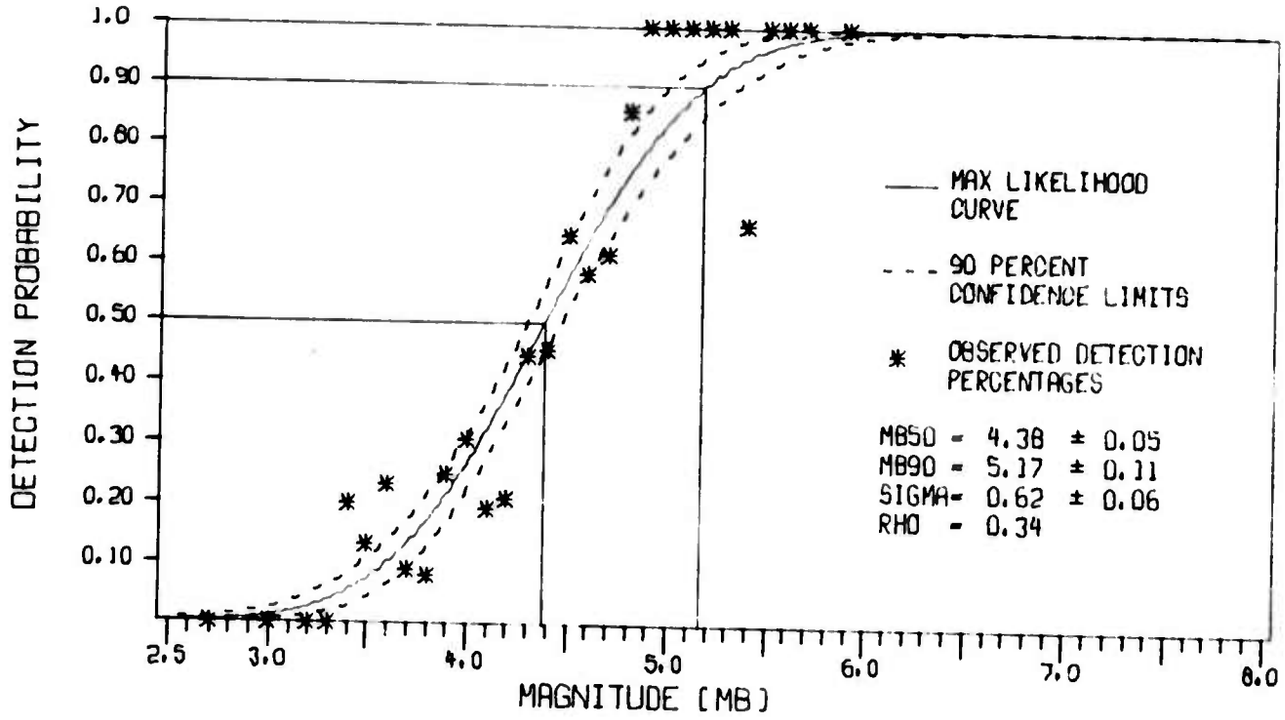
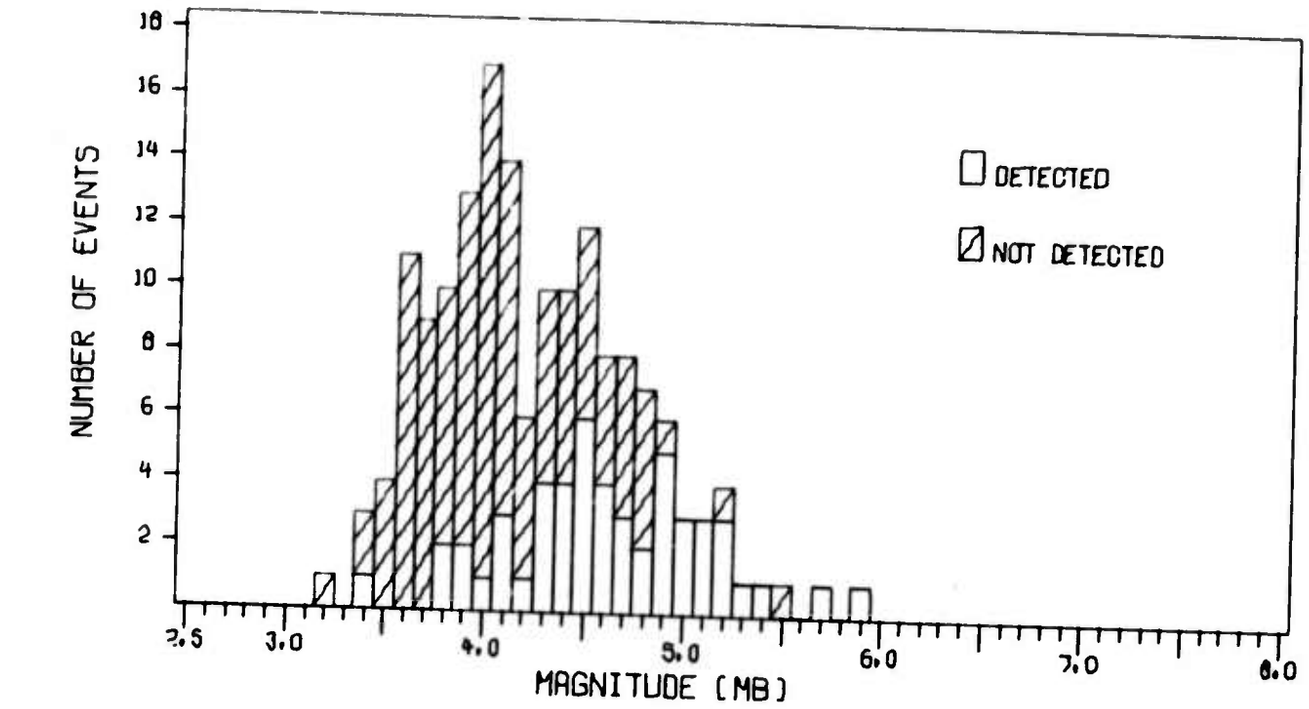


FIGURE IV-8

DETECTION STATISTICS FOR VLPE STATION 6 (KON)



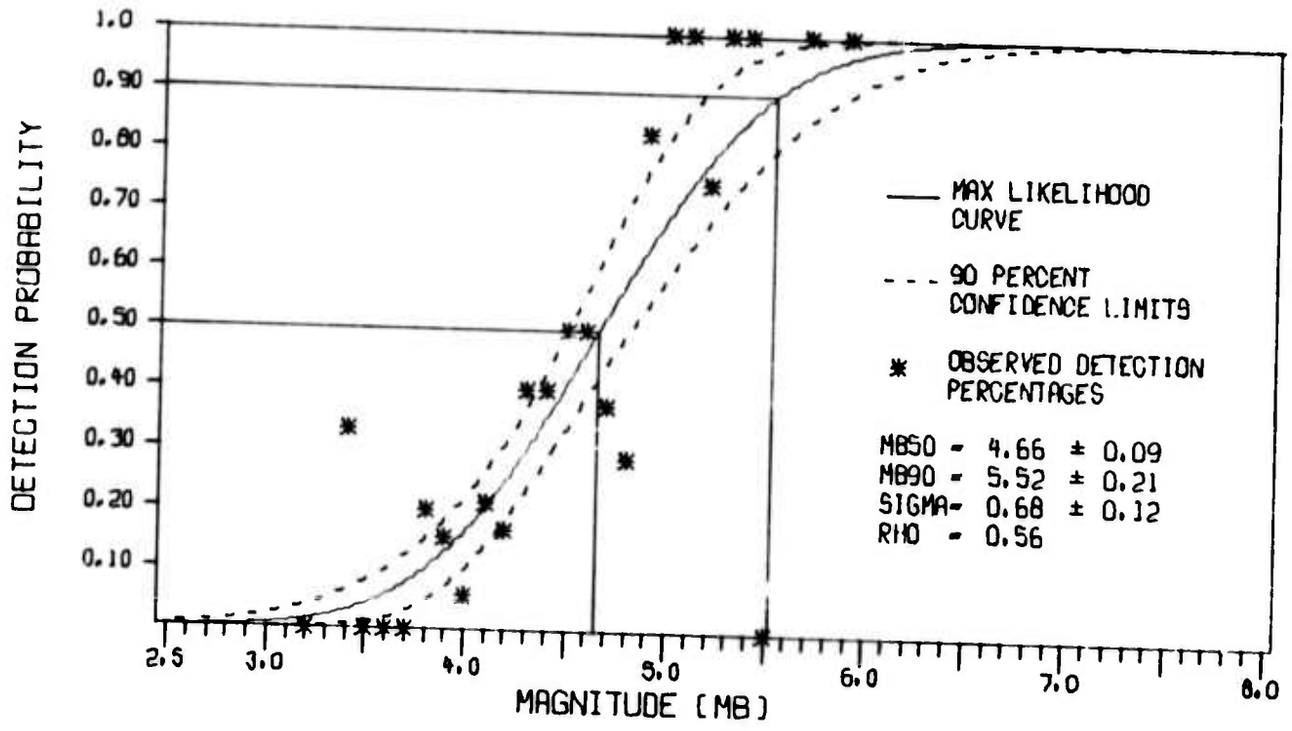
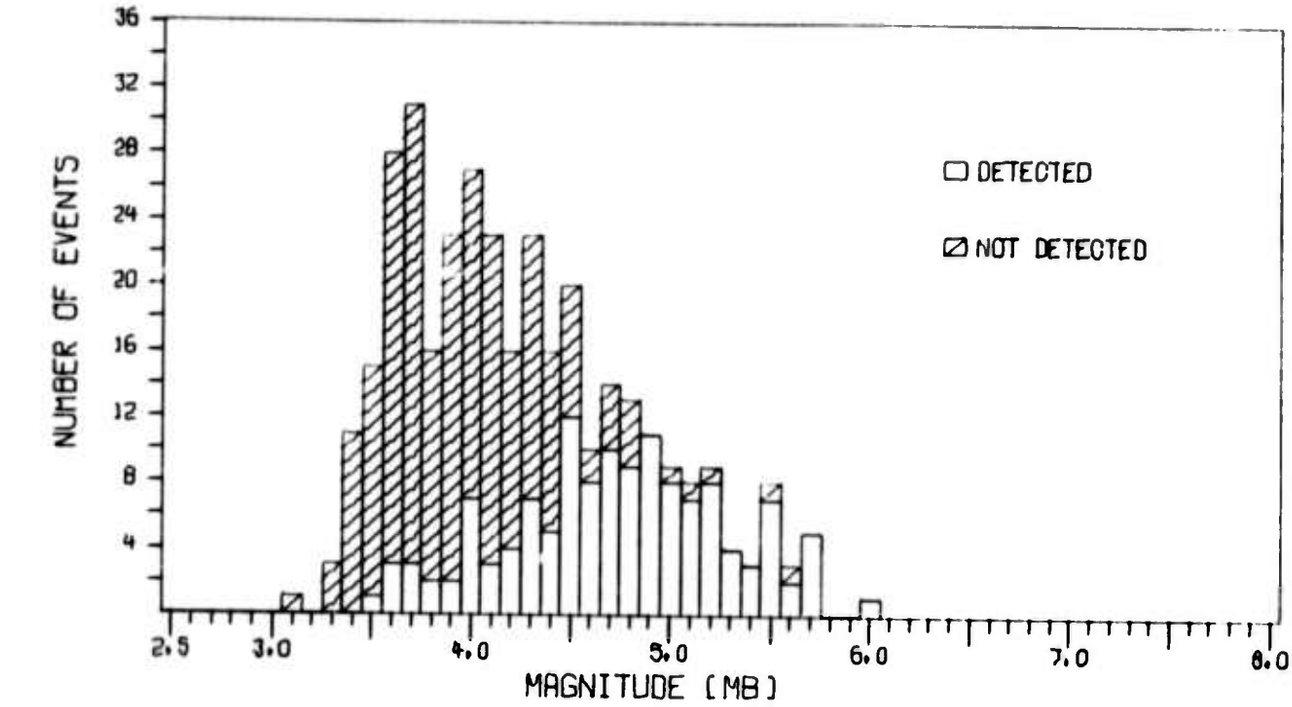


FIGURE IV-9

DETECTION STATISTICS FOR WLPE STATION 7 (OGD)



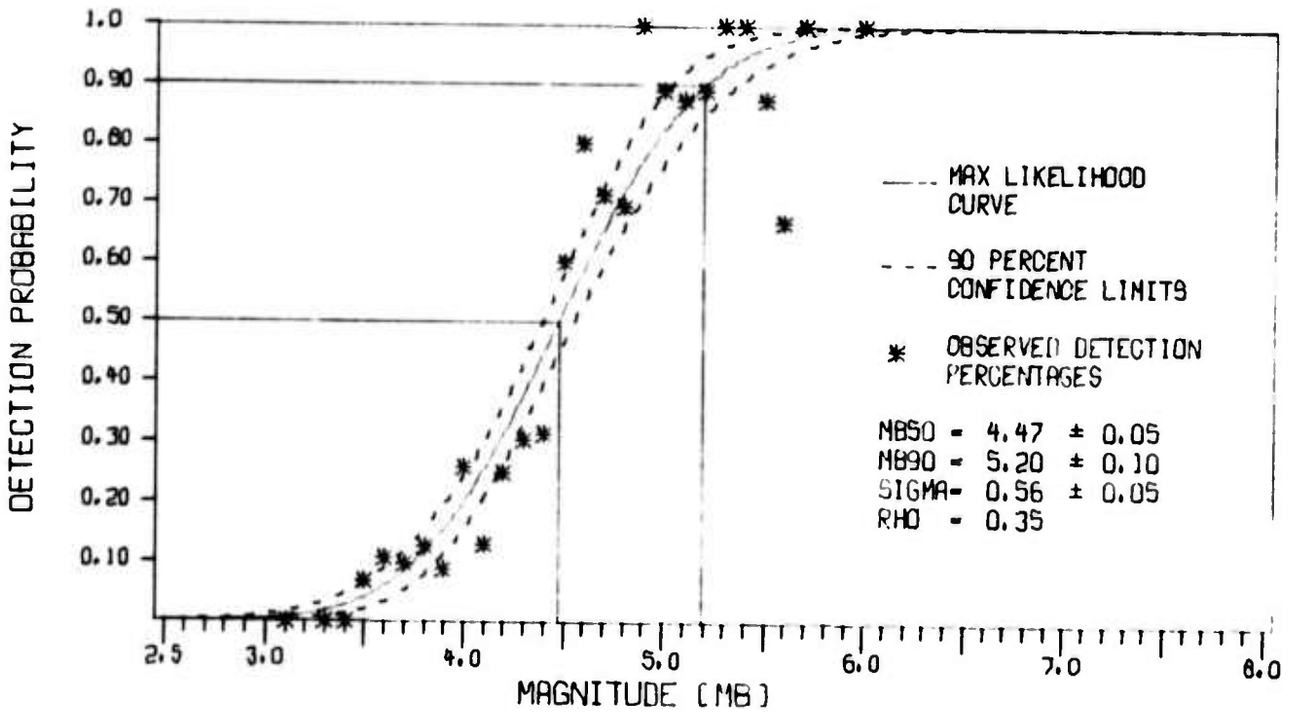
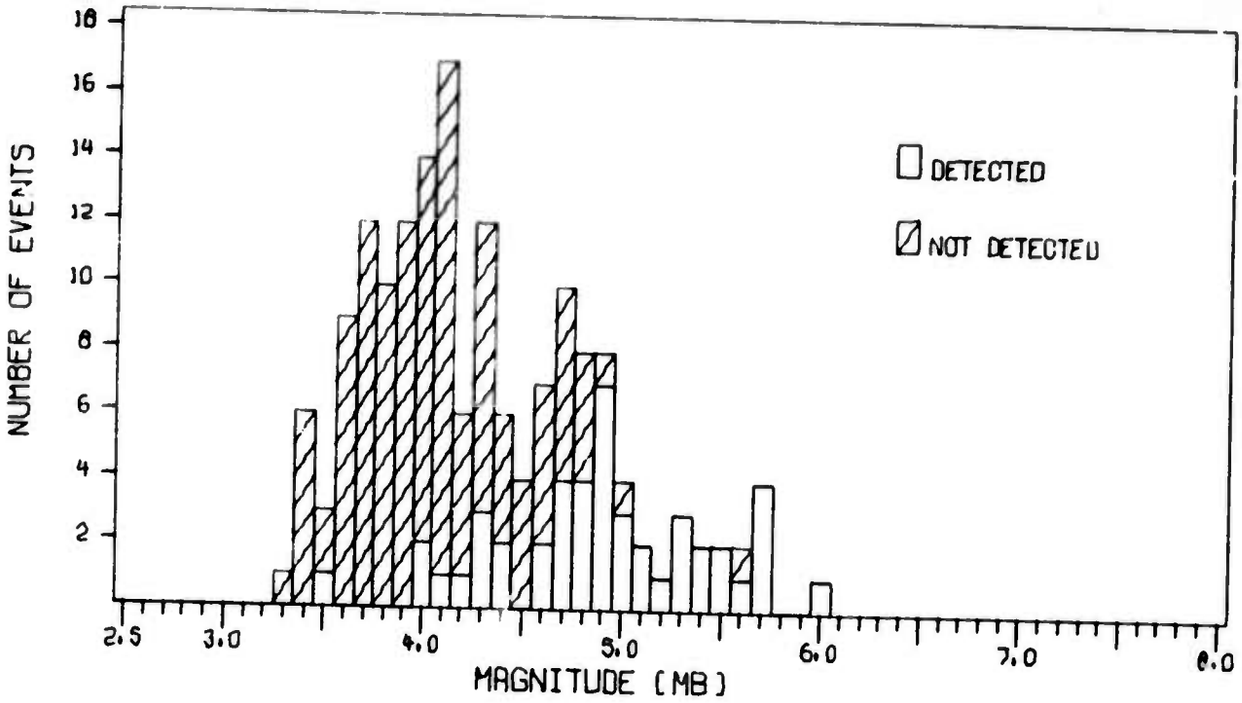


FIGURE IV-10

DETECTION STATISTICS FOR VLPE STATION 8 (KIP)



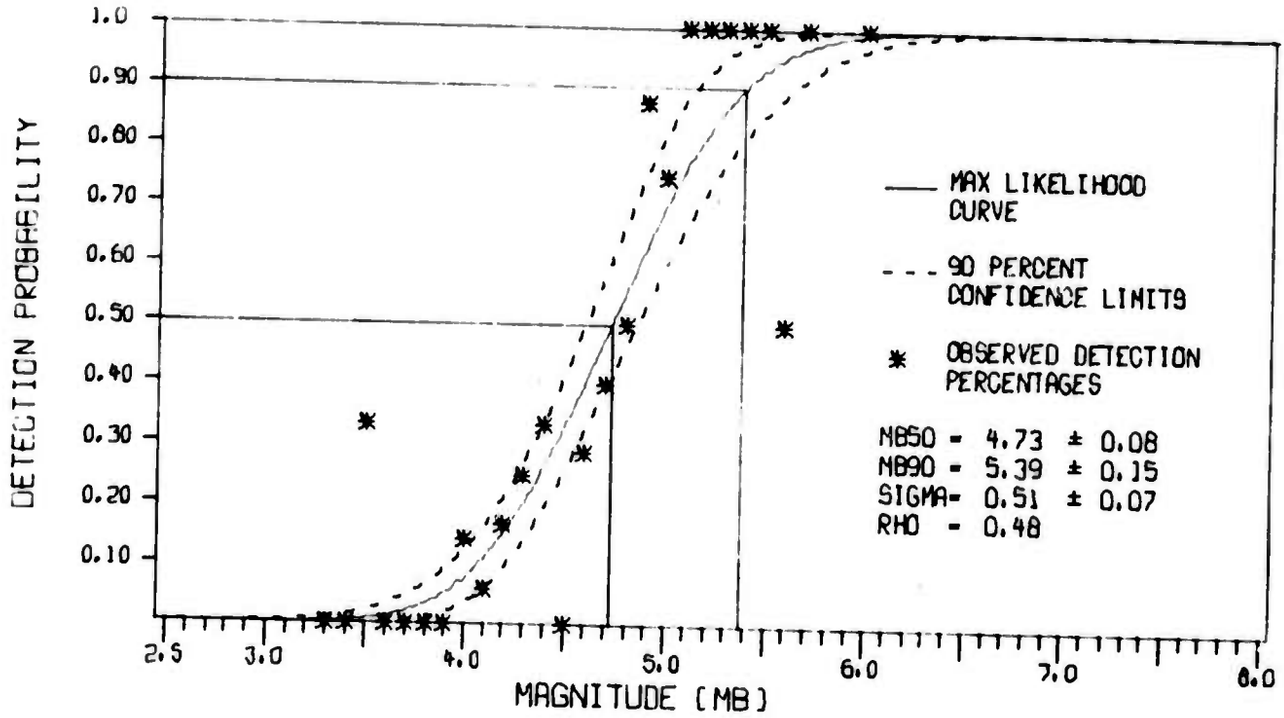
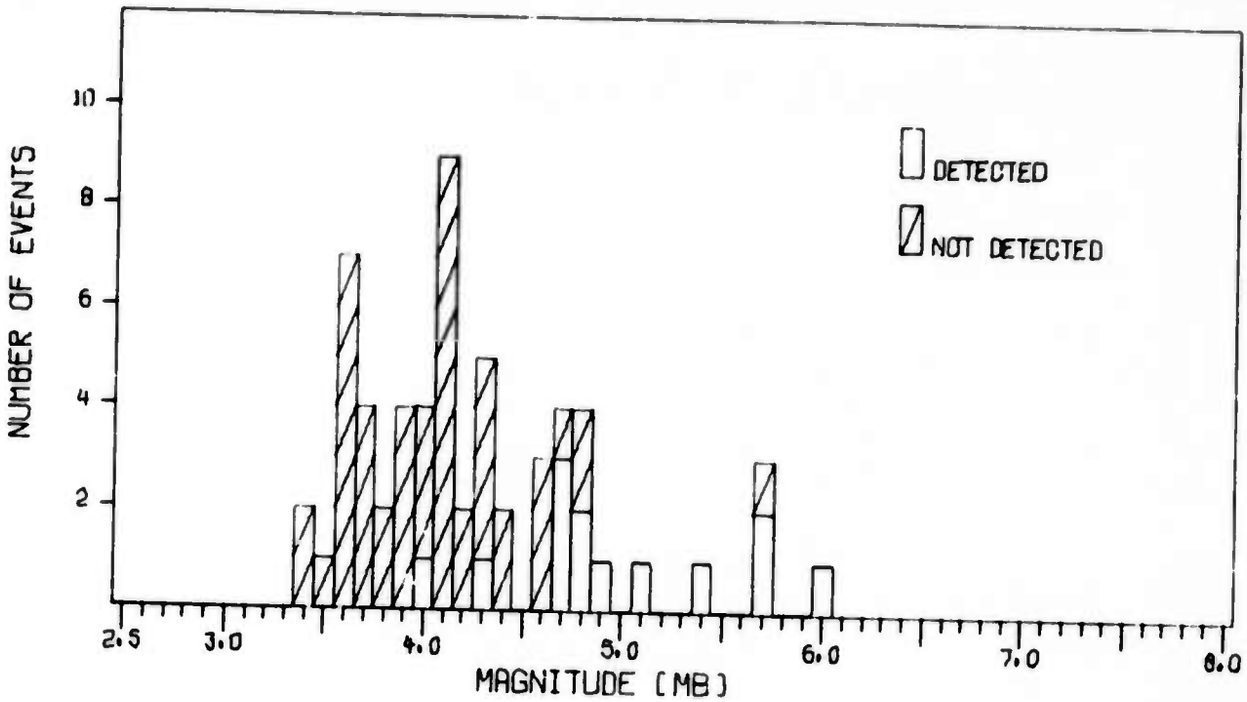


FIGURE IV-11

DETECTION STATISTICS FOR VLPE STATION 9 (ALQ)



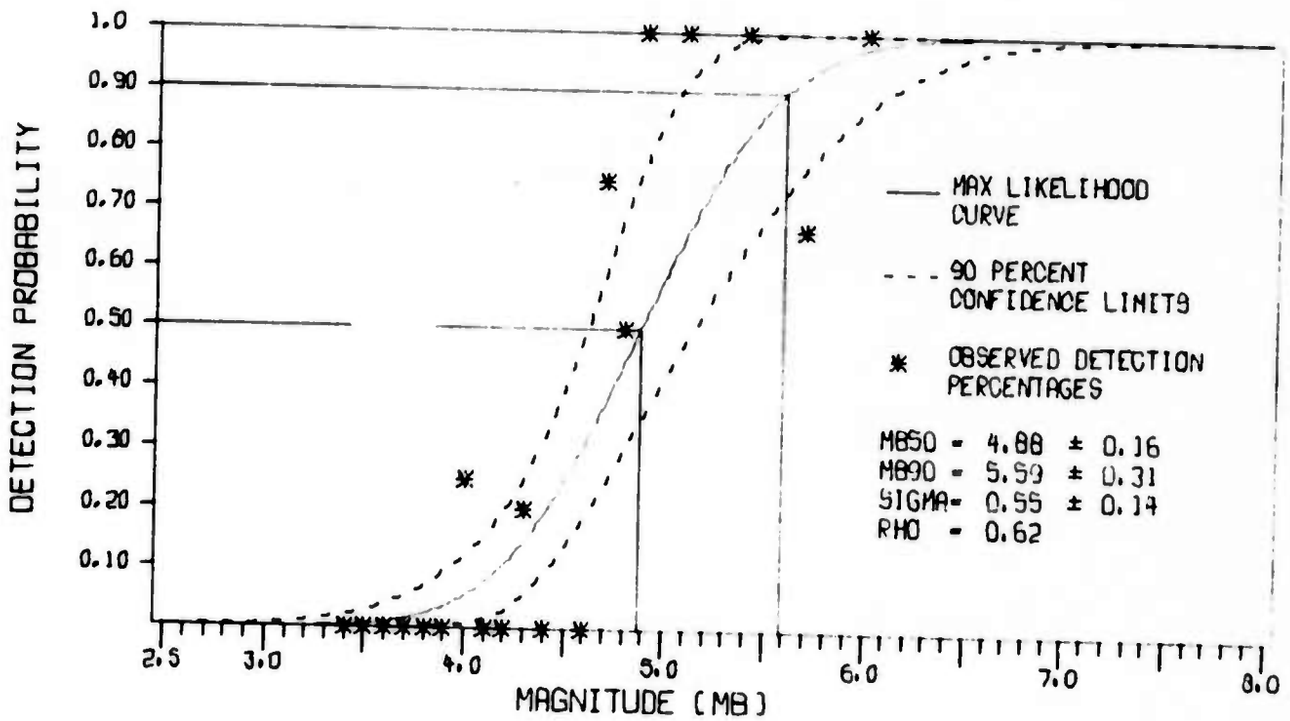
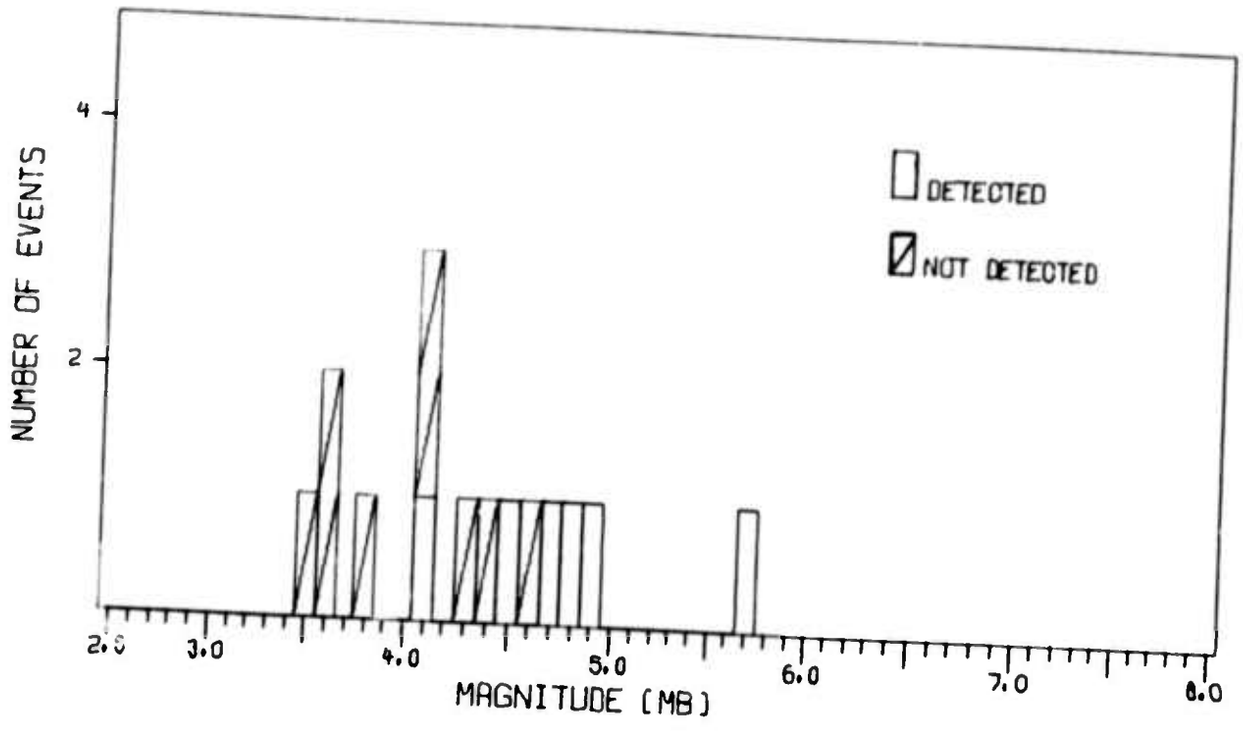


FIGURE IV-12

DETECTION STATISTICS FOR VLPE STATION 10 (ZLP)



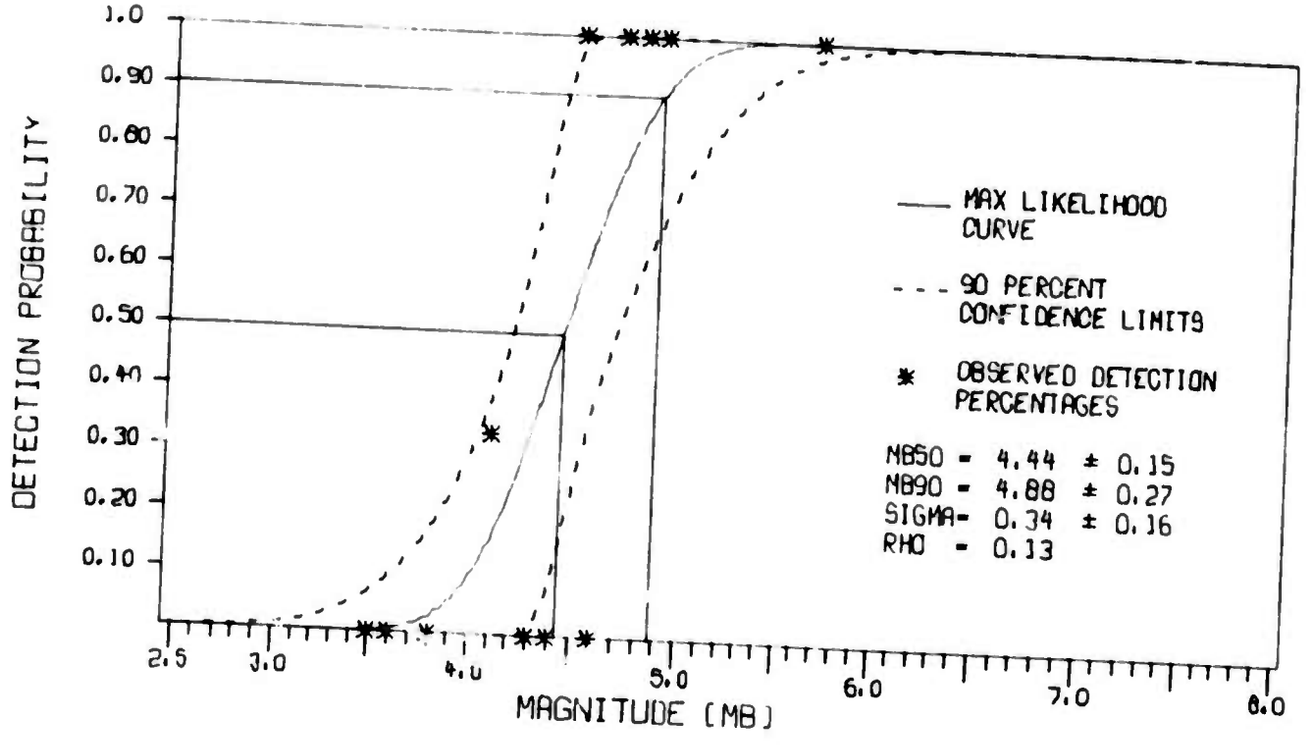


FIGURE IV-13

DETECTION STATISTICS FOR VLPE STATION 11 (MAT)

Table IV-1. Separate estimates were computed for all events within 50 degrees epicentral distance as well as for events of greater distance than 50 degrees since the distribution of station-events versus distance shows two distinct groupings (Lambert and Becker, 1973). It is seen that the difference in 50 percent detectability for these two subsets ranges from 0.2 to 0.5 m_b units. The best stations are CHG and KON (m_b of 4.35 and 4.38) and the average m_b of all stations is 4.56.

Table IV-1 also gives the detection thresholds in terms of M_s corresponding to our m_b values. The following relationship was used for this conversion and will be discussed in greater detail in the next section.

$$(3)\quad M_s = 1.20\, m_b - 1.74 \pm 0.5$$

Thus, we obtained the value $\sigma_r = 0.5$ for use in Equation (2). Since the average estimate of σ_m as defined in (2) was 0.63 for the 11 single stations and we found a typical value $\sigma_M = 0.4$ for the detection curve based on M_s values, this value was used throughout to estimate 90 percent M_s thresholds.

3. VLPE Network Detection Capabilities

Detection statistics were computed for each of the three VLPE networks defined above and in Section II-B. The results are presented in Figures IV-14 through IV-19. Only those events were included for which at least one station in the network was operational (i.e. events where all channels were malfunctioning or contained mixed signals were deleted). Separate statistics were compiled for all events for which at least two stations were operational for each network and two-station detection was required.

Table IV-2 summarizes the results obtained by the maximum likelihood estimations for the three networks. It is interesting to notice that the networks requiring one operational station are almost equivalent in terms of 50 percent m_b threshold ($m_b = 4.2$).

Lambert and Becker (1973) indicated a decrease of 0.3 m_b units in the 90 percent detection levels between winter and summer networks for which one operational station was required. They attributed this difference to the presence of higher noise levels at specific VLPE sites during the winter. For this study, network 1 corresponds to the winter network and network 2 corresponds to the summer network with the addition of the August 1972 event ensemble. We now find only an insignificant decrease in the 90 percent threshold between network 1 and network 2.

In reviewing the histogram for network 2 (Figure IV-16), we find that a total of 3 events, one each at magnitudes (m_b) 5.0, 5.1, and 5.2, were not detected. Lambert and Becker had no missed detections for magnitudes (m_b) 4.9 and greater for the summer network. Thus, the effect upon VLPE network detection thresholds due to possible seasonal variations in noise levels is unresolved.

The 90 percent detection threshold for network 3 (event ensemble for November-December 1972) is less than those of the first two networks. This decrease in the 90 percent threshold may be due to variations in the number of stations and is probably insignificant since the 50 percent thresholds for the three networks are about equal ($m_b \simeq 4.2$).

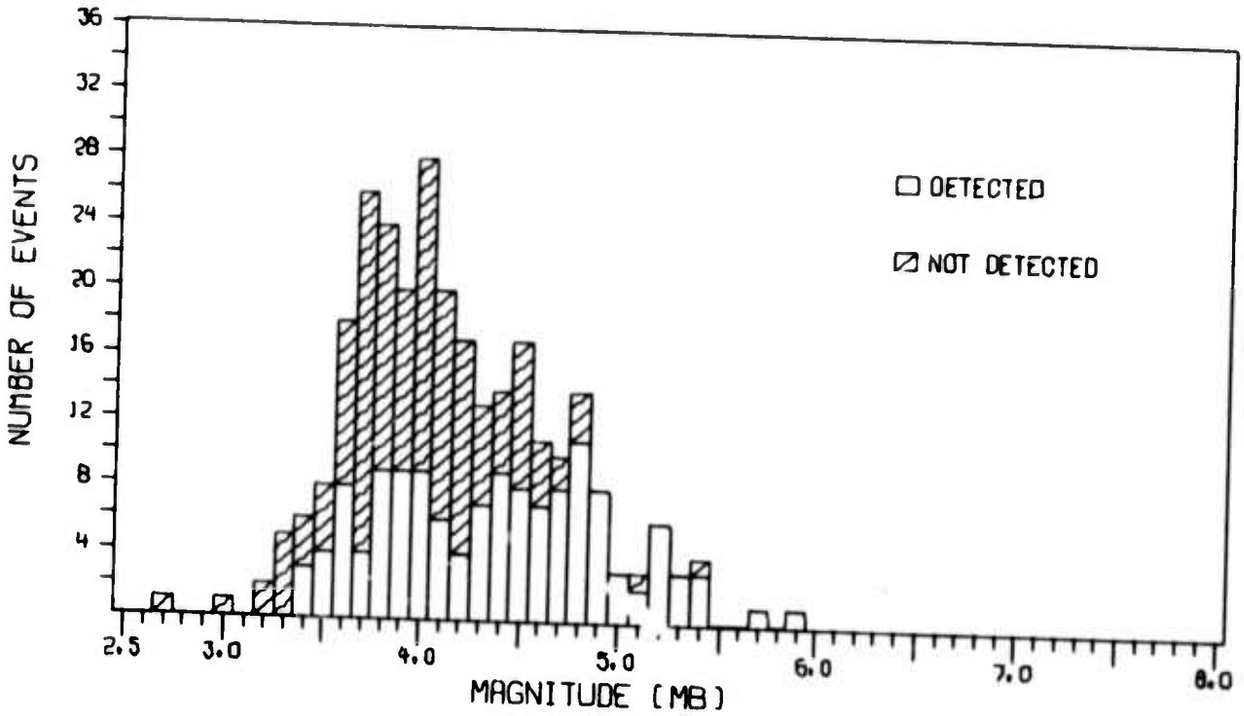
Comparing the networks requiring two operational stations and two stations detecting for a detection decision to the networks requiring one operational station, we expect a significant increase in the 50 percent detection threshold and only a slight increase for the 90 percent detection threshold. Wirth (1971) shows that for two stations and their associated detection probabilities, the exact probability for both stations detecting is the sum of the product of the single station probabilities. His result assumes that the same two stations are operational which is not the case here. Thus, the problem becomes much more complex and we cannot predict exactly the new detection probabilities.

TABLE IV-1

VLPE SINGLE STATION DETECTION THRESHOLDS
IN TERMS OF m_b AND M_s

Station	Estimate of σ	Estimated 50 Percent m_b Thresholds			Corresponding M_s Thresholds					
					50 Percent			90 Percent		
		All Events	<50	>50	All Events	<50 Degrees	>50 Degrees	All Events	<50 Degrees	>50 Degrees
1 CTA	0.65	4.56	-	4.61	3.73	-	3.79	4.23	-	4.29
2 CHG	0.67	4.35	4.18	4.50	3.48	3.28	3.66	3.98	3.78	4.16
3 FBK	0.80	4.72	4.59	4.85	3.92	3.77	4.06	4.42	4.27	4.56
4 TLO	0.71	4.53	4.13	4.69	3.60	3.22	3.88	4.10	3.72	4.38
5 EIL	0.80	4.46	4.23	4.70	3.61	3.34	3.90	4.11	3.84	4.40
6 KON	0.62	4.38	4.26	4.45	3.52	3.37	3.60	4.02	3.87	4.10
7 OGD	0.68	4.66	-	4.66	3.85	-	3.85	4.35	-	4.35
8 KIP	0.56	4.47	4.30	4.59	3.62	3.42	3.77	4.12	3.92	4.27
9 ALQ	0.51	4.73	-	4.73	3.94	-	3.94	4.44	-	4.44
10 ZLP*	0.55	4.88	-	4.88	4.12	-	4.12	4.62	-	4.62
11 MAT*	0.34	4.44	4.27	-	3.59	3.38	-	4.09	3.88	-
Averages	0.63	4.56	4.28	4.66	3.73	3.40	3.86	4.23	3.90	4.36

*Insufficient data at these sites.



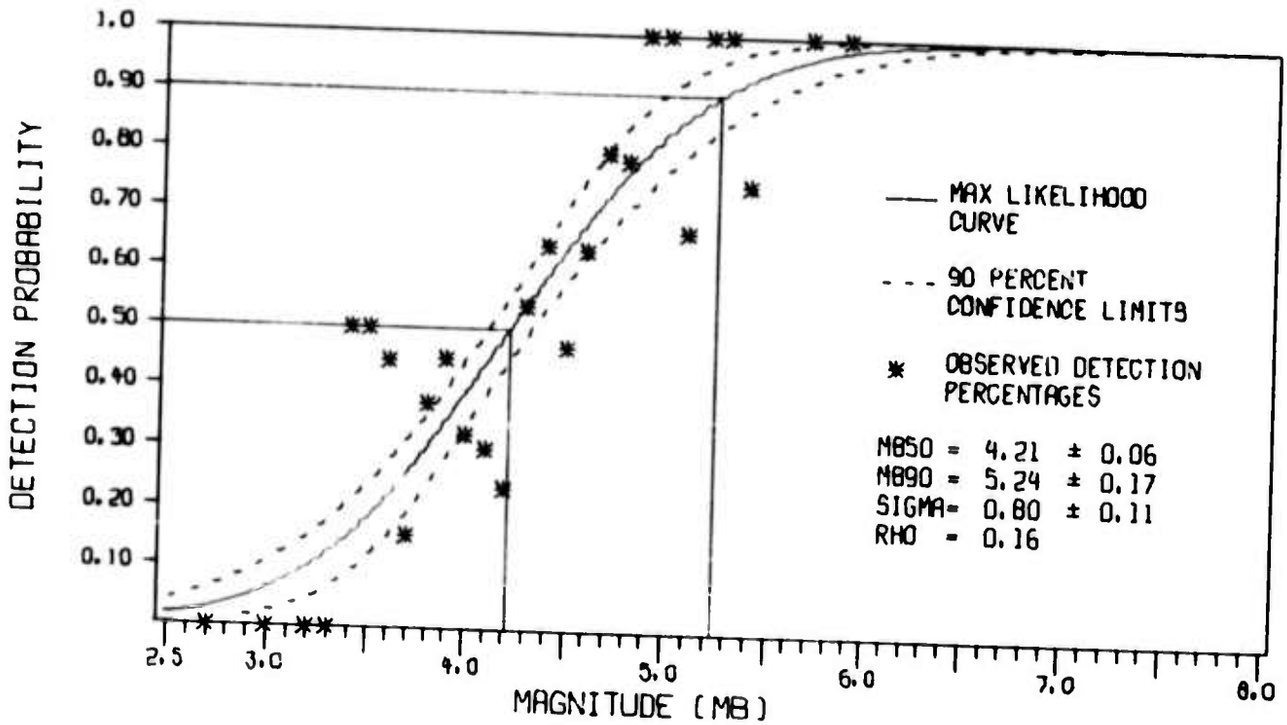
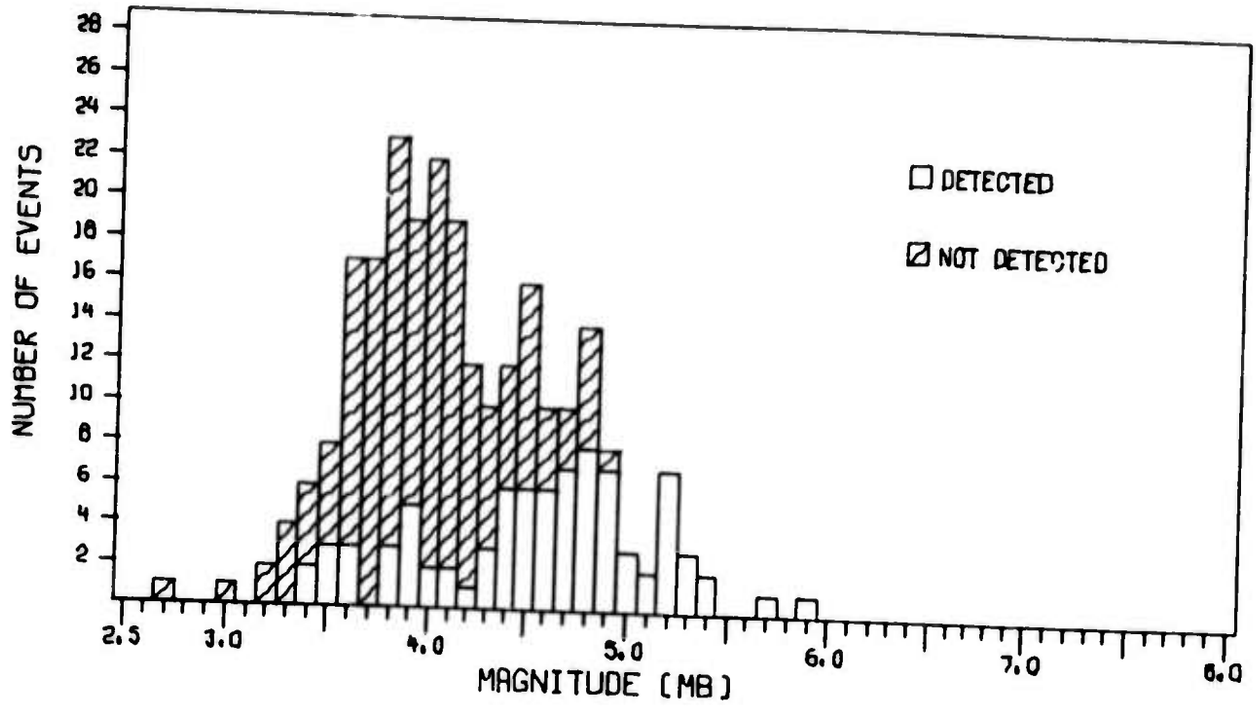


FIGURE IV-14

DETECTION STATISTICS FOR VLPE NETWORK 1
AT LEAST 1 OPERATIONAL STATION



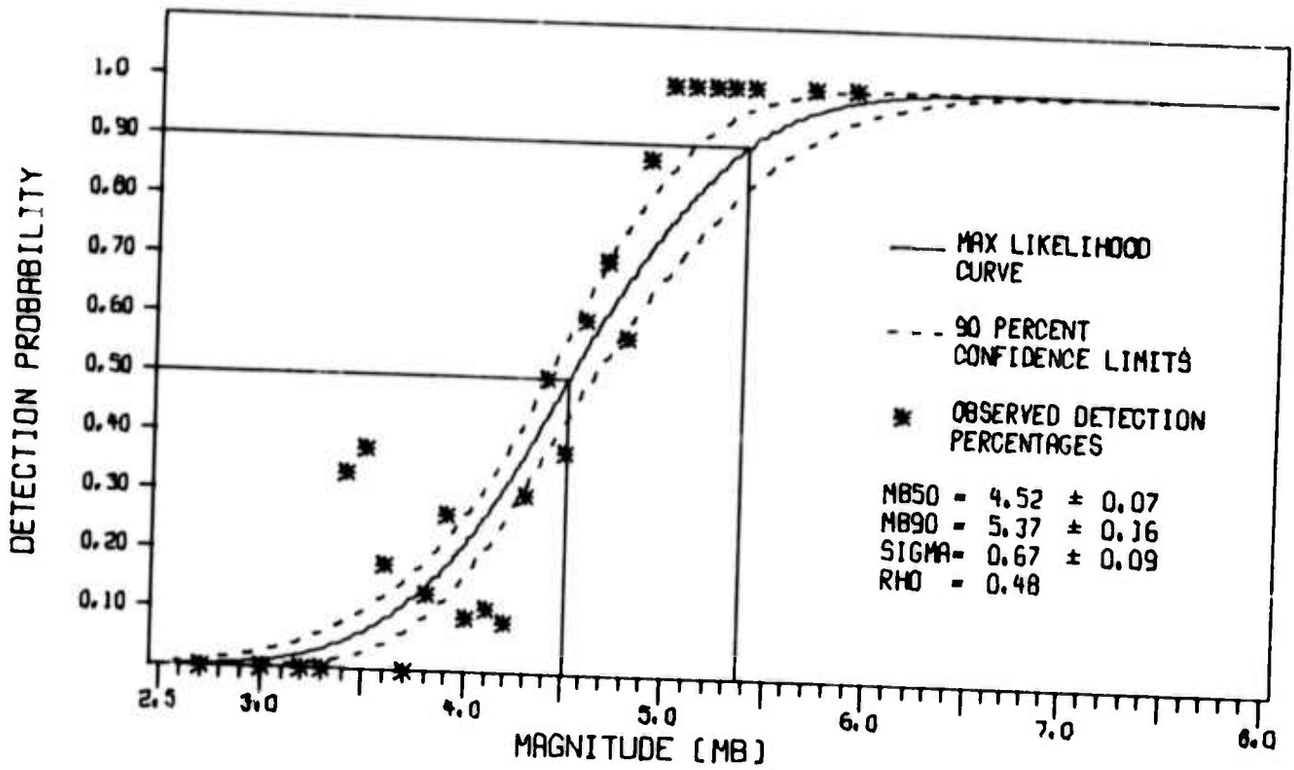
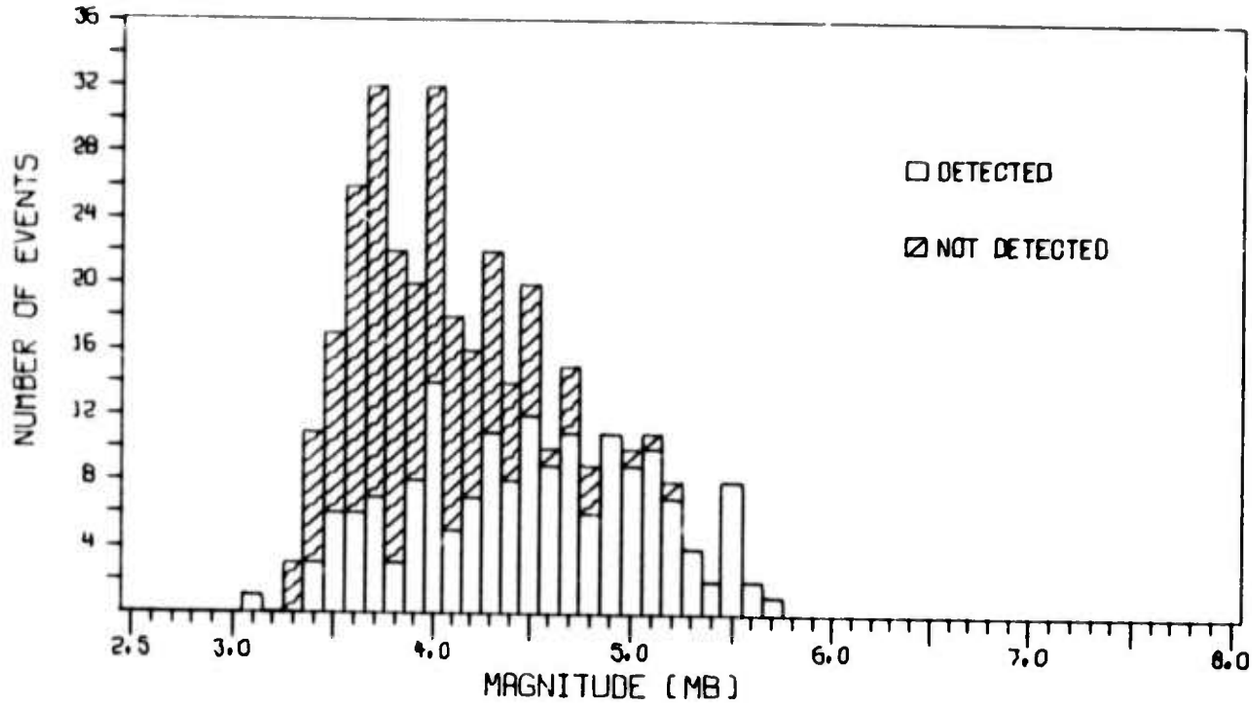


FIGURE VI-15

DETECTION STATISTICS FOR VLPE NETWORK I
AT LEAST 2 OPERATIONAL STATIONS



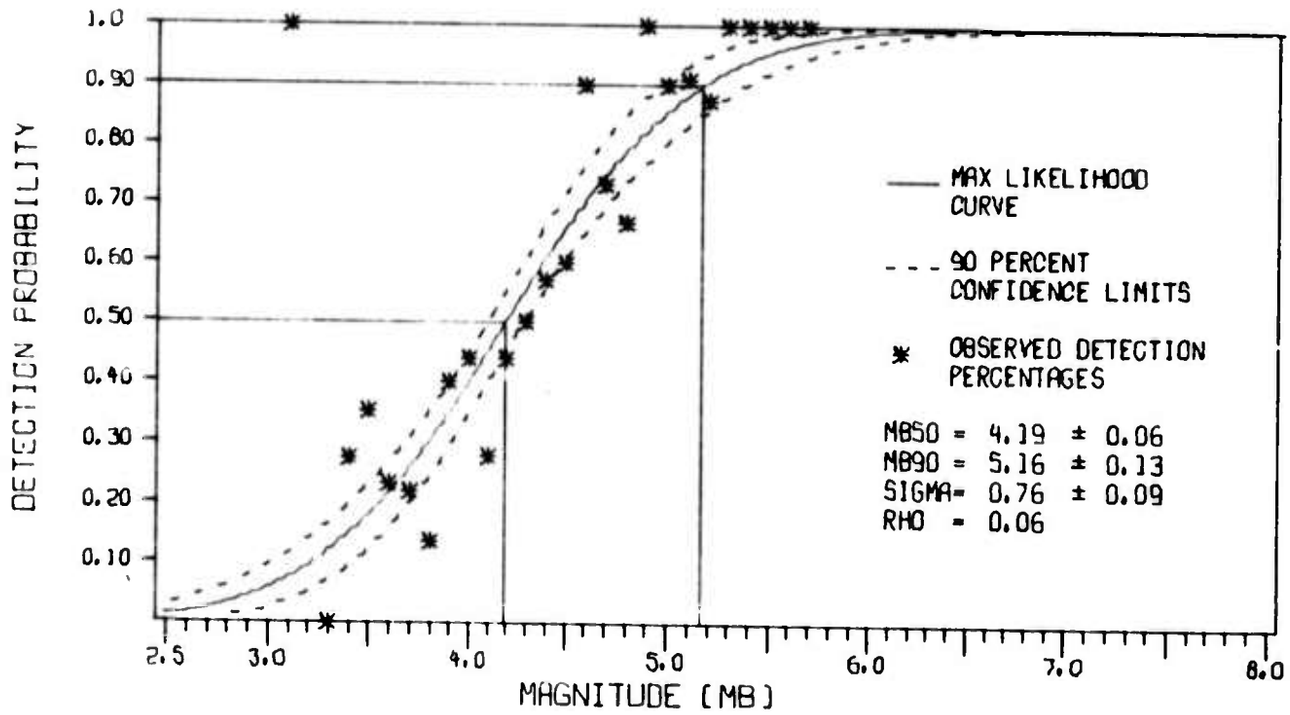


FIGURE IV-16

DETECTION STATISTICS FOR VLPE NETWORK 2
AT LEAST 1 OPERATIONAL STATION

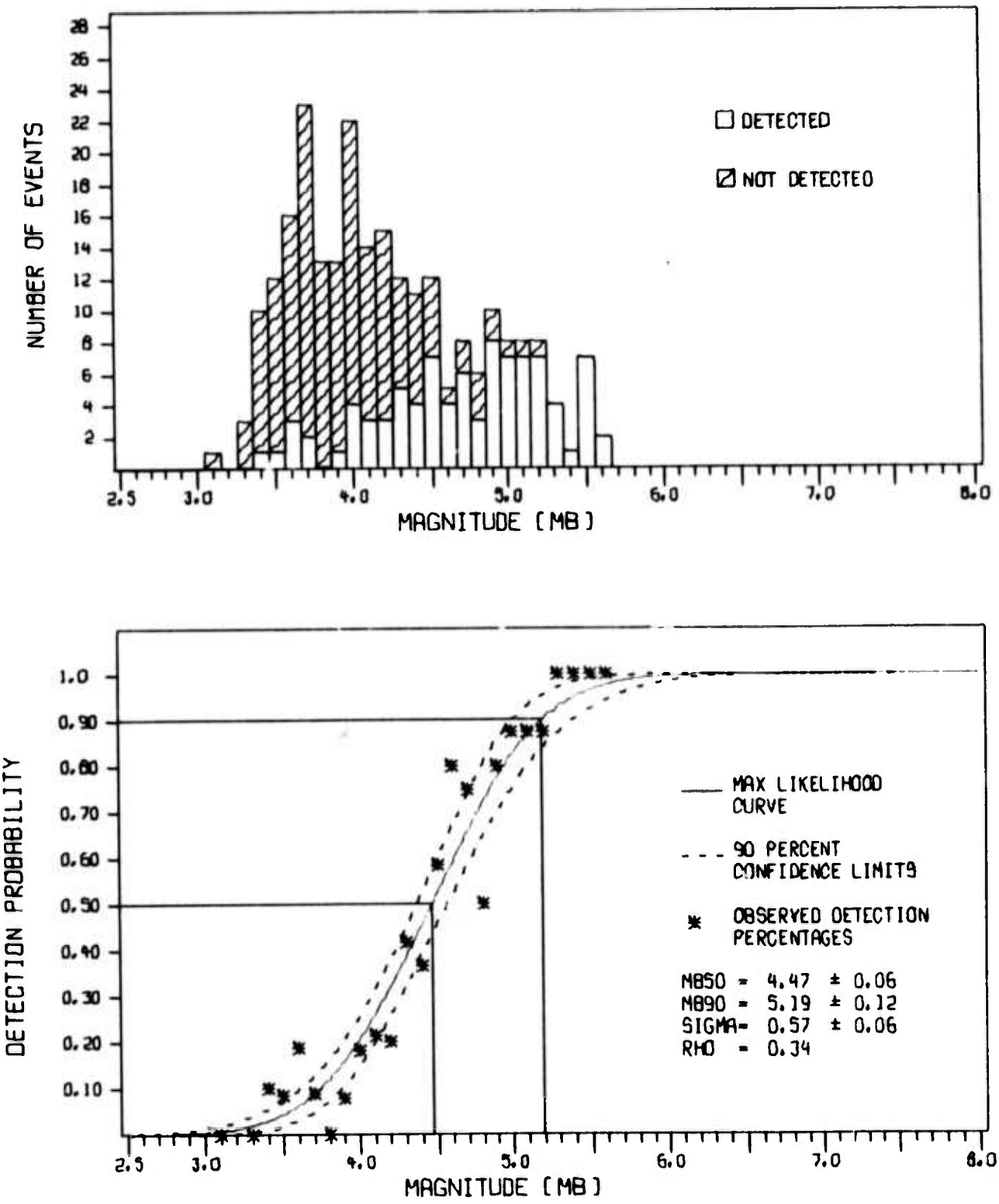
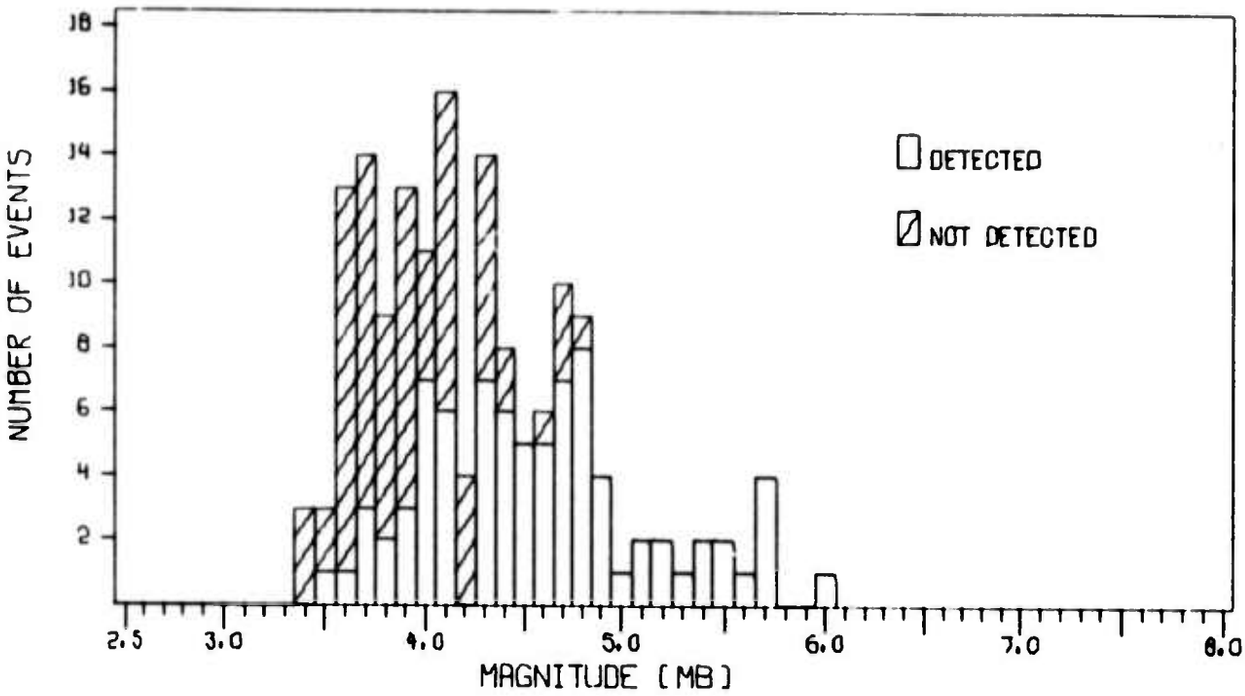


FIGURE IV-17

DETECTION STATISTICS FOR VLPE NETWORK 2
AT LEAST 2 OPERATIONAL STATIONS



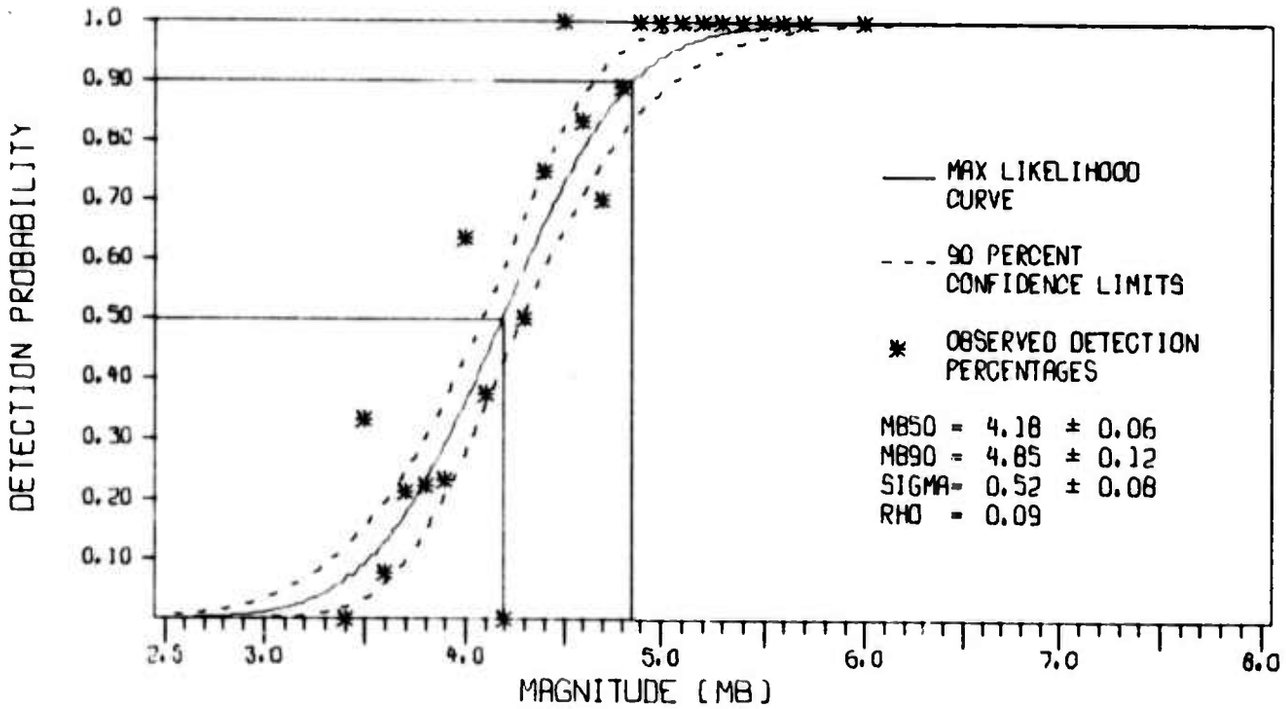
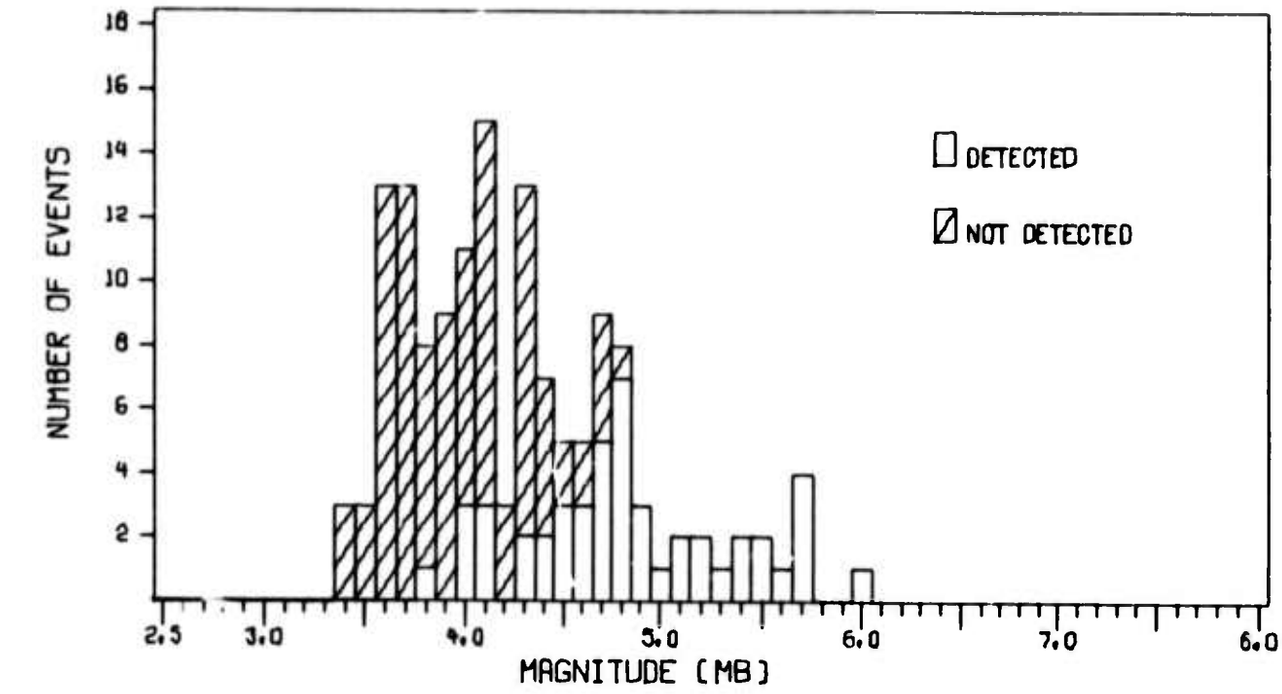


FIGURE IV-18

DETECTION STATISTICS FOR VLPE NETWORK 3
AT LEAST 1 OPERATIONAL STATION



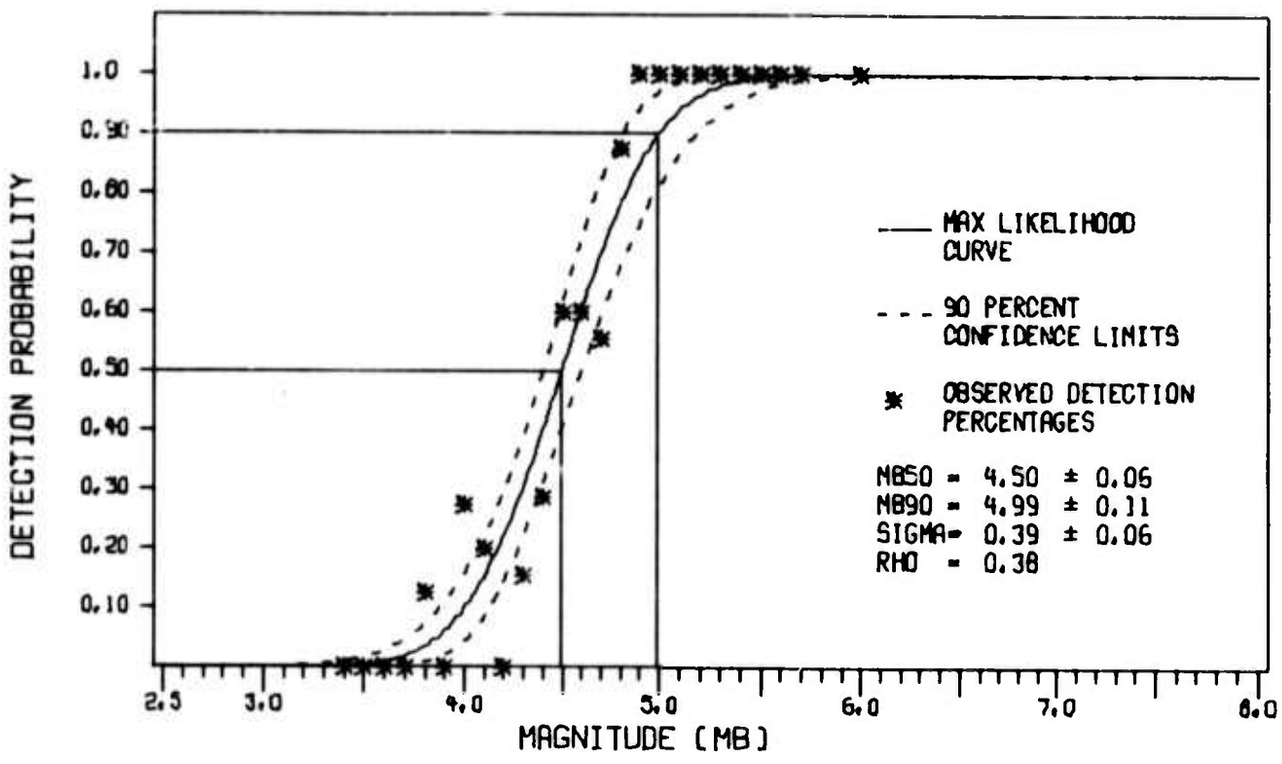


FIGURE IV-19

DETECTION STATISTICS FOR VLPE NETWORK 3
AT LEAST 2 OPERATIONAL STATIONS

The results of the maximum likelihood detection estimations for the two station networks do show increases of 0.3 m_b units and 0.1 m_b units for the 50 and 90 percent detection thresholds (Table IV-2). The 0.3 m_b units increase is significant while the 0.1 m_b units increase is small and both increases were as expected.

Table IV-2 also lists estimates of the detection thresholds in terms of M_s values, using the previously defined M_s versus m_b relationship and σ_M values. It should be emphasized, however, that these values are subject to significant uncertainties, and it is expected that more reliable estimates may be obtained in our future studies when direct detection statistics based on M_s values become available.

C. MIXED EVENT PROBABILITIES

Signals are classified as mixed events when one or more dispersed signals arrive adjacent to or overlapping onto either end of the expected signal velocity window. When this situation occurs, all epicenter source reports, location determinations, and magnitudes are reviewed in an attempt to resolve which signal is the expected one. If the problem is resolved in favor of the expected signal, a detection is indicated, but with an additional comment; the presence of mixed event signals. If the problem is not resolved, the signal was recorded as a mixed event signal. This study deals only with the latter classification, mixed event signal. Further, we consider only stations having signals detected, signals not detected, and mixed event signals as operational stations.

We determine the probability of mixed events occurring at VLPE networks based on our observational data. These probabilities are displayed in Table IV-3 and can be read in the following manner:

- Based on 844 events with at least one operational station, the probability is 0.22 that a given event appears as a mixed signal at a given station and 0.75 that the signal is not mixed.
- Similarly, 734 events had at least three stations operational.

TABLE IV-2

VLPE NETWORK DETECTION THRESHOLDS
IN TERMS OF m_b AND M_s

	At Least 1 Operational Station				At Least 2 Operational Stations			
	Detection Thresholds				Detection Thresholds			
	50% m_b	90% m_b	50% M_s	90% M_s	50% m_b	90% m_b	50% M_s	90% M_s
Network 1	4.21	5.24	3.31	3.81	4.52	5.37	3.68	4.18
Network 2	4.19	5.16	3.29	3.79	4.47	5.20	3.62	4.12
Network 3	4.18	4.85	3.28	3.78	4.50	4.99	3.66	4.16

TABLE IV-3

NETWORK MIXED EVENT PROBABILITY STATISTICS

		Number of Events with i Operational Stations					
		844	817	734	470	237	40
Number of Mixed Events, N	N \ i	1	2	3	4	5	6
	0	0.78	0.65	0.56	0.52	0.54	0.63
	1	0.22	0.24	0.26	0.23	0.20	0.10
	2		0.11	0.11	0.12	0.12	0.09
	3			0.07	0.09	0.08	0.06
	4				0.04	0.05	0.10
	5					0.01	0.00
	6						0.02

Given a network of these stations, the probability that a given event will be seen as a mixed signal at all three is 0.07.

The actual number of mixed events that remain as mixed events for the total network was 49 and the average number of operational stations was 3.8. This translates into 5.8% (0.058 Probability) mixed events remaining with 3.8 operational stations for the total network. These values correspond closely to the appropriate probability numbers in Table IV-3.

The probability values shown under the columns for 5 and 6 operational stations (Table IV-3) clearly begin to misbehave. This is due to the smaller number of events actually having 5 and 6 operational stations per event. However, these values do give some estimate of the VLPE network requirements to further reduce the probability of mixed events occurring at all stations. Obviously, the percentage of mixed events is related to the detection capability of the station, (i.e. the more events a station detects, the greater is the probability of mixed events occurring). Thus the probabilities determined here are valid only for the present VLPE capability. It is also noteworthy that the percentage of mixed events at NORSAR LP is also 22% (Swindell, 1973). Thus, with respect to mixed events in this case, the added detection capability of NORSAR relative to VLPE stations, is offset by the spatial resolution provided by the array.

D. MATCHED FILTER AND THREE COMPONENT ADAPTIVE PROCESSOR PERFORMANCE

1. Discussion

Matched filters (reference waveform and chirp) and the Three Component Adaptive processor (TCA) were applied to a restricted suite of events as recorded at the VLPE stations to evaluate their effectiveness in increasing the signal-to-noise ratios of dispersed seismic signals. Reference waveform and chirp filters were applied to the transverse Love wave and the vertical Rayleigh wave of each test event. The TCA processor makes use of all three instrumental components (Lane, 1973). The goals of this analysis are:

- To obtain a first approximation of potential signal-to-noise ratio gains of reference waveform and chirp matched filters.
- To estimate the effectiveness of matched filters in increasing the surface-wave detection capability of the VLPE stations.
- To compare the relative effectiveness of reference waveform and chirp matched filters.
- To obtain a first estimate of the TCA processor detection capability.

Analysis of data recorded at the Alaskan Long-Period Array (Strauss, 1973) indicated that chirp filters were slightly more effective than reference waveform filters, that matched filters reduced the number of non-detected events by about 20 per cent, and that the greatest change in the detection versus body-wave magnitude plots caused by inclusion of these detections occurred at the 50 percent detection level. Analysis of data recorded at the Norwegian Seismic Array (Laun et al, 1973) indicated that reference waveform filters were slightly more effective than chirp filters, that matched filters reduced the number of non-detected events by about 10 percent, and that inclusion of these detections in the detection versus body-wave magnitude plots caused changes between the 30 percent and 80 percent detection levels.

Matched filter performance was analysed in terms of detection improvement and signal-to-noise ratio improvement over the equivalent bandpass signal-to-noise ratio. Each signal-to-noise ratio was calculated as the ratio of the peak value of the signal to the root-mean-square (RMS) value of the noise as measured in a gate ahead of the signal. The signal-to-noise ratio improvement of a matched filtered trace over the corresponding bandpass trace, expressed in decibels, is:

$$\text{IMPROVEMENT (dB)} = 20 \text{ LOG } (\text{SNR}_{\substack{\text{matched} \\ \text{filter}}} / \text{SNR}_{\substack{\text{Bandpass} \\ \text{filter}}})$$

Since the signals are not noise-free, the signal amplitudes are actually signal-plus-noise amplitudes. For this reason, we will hereafter refer to the signal-plus-noise to noise ratio (SNNR).

The performance of the TCA processor was analysed only in terms of detection improvement.

2. Data Base

A suite of 29 earthquakes and 8 presumed explosions was selected for this first evaluation of matched filter performance for the VLPE stations. These events and their associated parameters are listed in Tables IV-4 and IV-5. (The ninth presumed explosion in the list was used as a reference waveform but was otherwise not included in the analysis.) An X under a station number indicates that this station was operating at the time this event occurred; an * indicates that the event as recorded at this station was used as a reference waveform. This suite of earthquakes and presumed explosions were analysed and reported in Special Report No. 6, Extended Array Evaluation Program (Lambert and Becker, 1973). The earthquakes all have epicenters in or near northern Sinkiang (strippled area in Figure IV-20). This region was chosen for its proximity to the eastern Kazakh test area and to minimize regional variations. The general location of the presumed explosions are indicated in Figure IV-20 by solid black spots.

Inspection of Table IV-4 reveals that events 0075 and 0076 have origin times differing by 10 seconds and 0317 and 0318 have origin times differing by 27 seconds. It is believed that these pairs of events are actually single events. In the case of the first pair of events, both were reported by NORSAR with the second event being perhaps picked from a depth phase of the first. In the case of the second pair, one was reported by PDE and the other by NORSAR; the difference in origin times is perhaps due to errors in picking the records. Therefore, these pairs of events will hereafter by considered as single events and will be reported as 0075

TABLE IV-4

EARTHQUAKE EVENT LIST
(PAGE 1 OF 2)

Event Number	Month	Day	Origin Time	m_b	Lat °N	Long °E	Available Stations								
							1	2	3	4	5	6	7	8	9
0006	01	02	10.27.35	5.2	41.8	84.5		*	X	*			X		
0021	01	06	06.30.36	4.7	40.7	72.4		*	X	X			X		
0044	01	15	20.21.50	5.4	40.3	79.0		*	*	*			*		
0045	01	15	20.45.22	4.6	39.3	79.9		X	X	X		X	X		
0075	01	28	20.29.09	4.5	40.8	81.4		X	X	X		X	X		
0076	01	28	20.29.19	4.4	43.0	78.0		X	X	X		X	X		
0108	02	06	07.30.11	4.7	41.6	82.2			X	X		X	X		
0120	02	11	05.55.46	4.9	39.9	77.4			X	X		X			
0129	02	16	23.19.20	4.8	41.7	80.7			X			*	X		
0225	03	02	19.57.42	3.5	43.0	76.0			X			X	X		
0235	03	04	04.00.09	4.5	40.0	80.0			X				X		
0236	03	04	08.22.16	4.4	43.0	86.0			X				X		
0238	03	04	18.24.11	5.1	39.0	75.0			X				X		
0302	03	18	19.54.18	3.2	41.0	72.0			X	X		X			
0309	03	20	21.47.55	3.4	40.0	80.0			X	X		X			
0317	06	02	04.21.49	3.8	42.0	82.0	X				X	X		X	X
0318	06	02	04.22.16	3.7	42.0	82.0	X				X	X		X	X
0319	06	02	05.11.13	3.5	43.0	81.0	X				X	X		X	X

TABLE IV-4
EARTHQUAKE EVENT LIST
(PAGE 2 OF 2)

Event Number	Month	Day	Origin Time	m_b	Lat °N	Long °E	Available Stations								
							1	2	3	4	5	6	7	8	9
0320	06	02	06.30.49	3.9	42.0	81.0	X				X	X		X	X
0384	06	18	09.18.49	4.3	40.0	73.0							X	X	X
0449	07	05	01.09.53	4.6	44.6	81.1				*	X			X	
0450	07	05	02.41.54	3.5	44.0	86.0				X	X			X	
0451	07	05	04.09.49	4.3	43.6	87.9				X	X			X	
0470	07	10	19.03.33	4.7	43.4	88.6	X			X	X	X		X	
0491	07	15	00.35.52	3.8	43.0	78.0	X			X	X			X	X
0510	07	18	03.27.07	4.0	39.0	77.0	X			X	X			X	X
0536	07	28	05.50.29	4.3	42.0	81.0	X				X				
0604	08	09	16.28.14	4.5	41.0	72.0				X	X			X	
0662	08	22	16.34.56	4.6	40.0	79.0	X			X	X			X	

TABLE IV-5

PRESUMED EXPLOSION EVENT LIST

Event Number	Month	Day	Origin Time	m_b	Lat °N	Long °E	Available Stations								
							1	2	3	4	5	6	7	8	9
0116	02	10	05.02.57	5.5	50.0	78.9			X	X		X			
0260	03	10	04.56.57	5.5	50.0	78.0			X			X	X		
0339	06	07	01.27.57	5.5	49.8	78.2	X				X	X	X	X	X
0456	07	06	01.02.58	4.4	49.7	78.2				X	X			X	
0626	08	16	03.16.57	5.2	49.8	78.1	X			X	X			X	
0652	08	20	02.59.58	5.7	49.5	48.2	X			X	X			X	
0672	08	26	03.46.57	5.5	50.0	77.8		X		X	X			X	
0679	08	28	05.59.56	6.3	73.3	55.1		X		X	X			X	
0797	12	10	04.26.58	5.7	49.8	78.1		*						*	

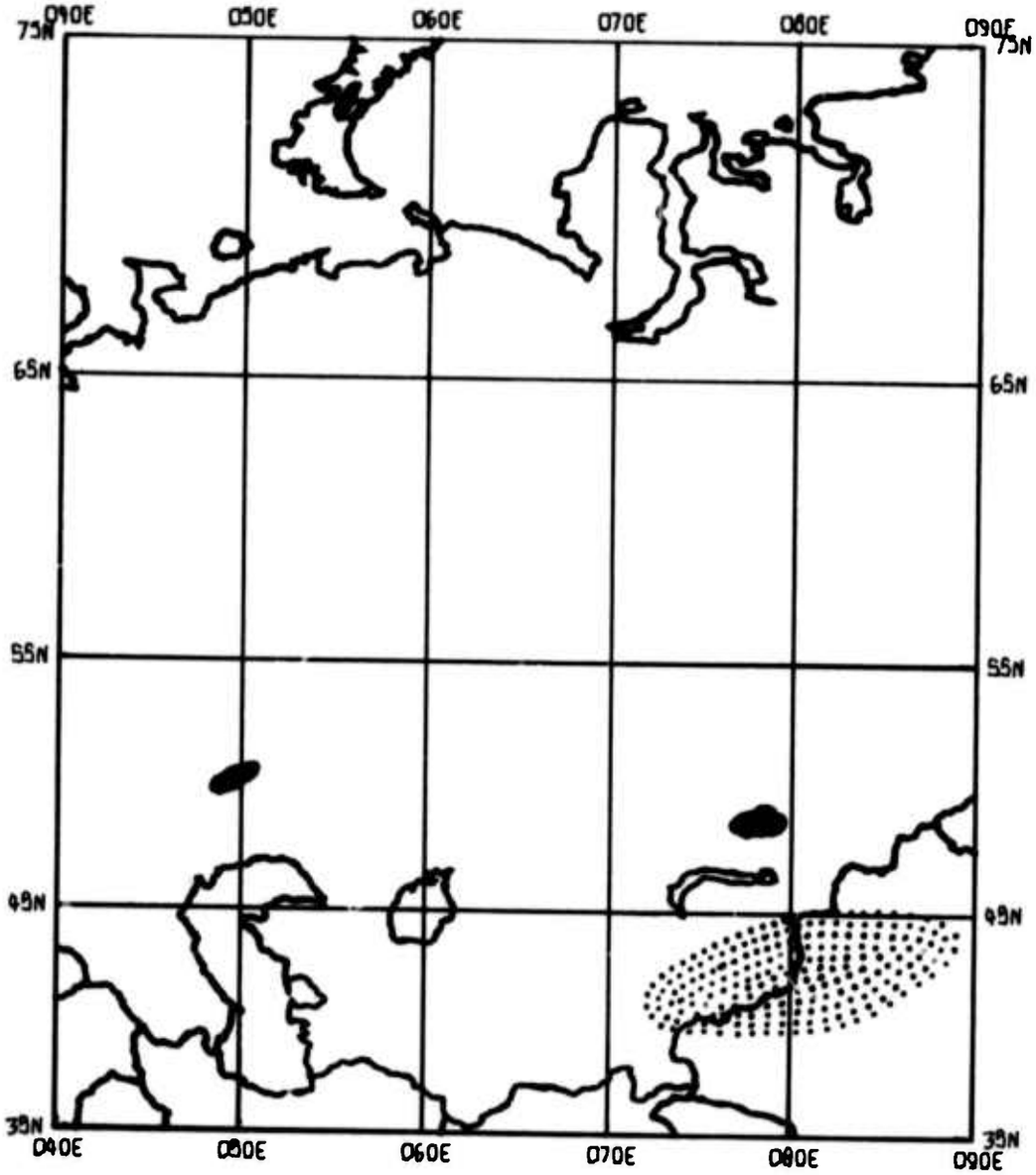


FIGURE IV-20

LOCATION OF AREAS OF INTEREST

and 0317, respectively. This results in a revised data base of 27 events and 8 presumed explosions.

Each earthquake or presumed explosion as recorded at a given station will be considered to be an individual event and will hereafter be referred to as a station-event. There are, therefore, a total of 98 station-events derived from the 27 earthquakes and 31 station-events derived from the 8 presumed explosions.

The data base used for the TCA processor did not include all of the station-events used in the matched filter analysis, since some of the station-events could not be handled by this method due to malfunctioning components. A total of 78 station-events were TCA-processed.

3. Matched Filter Application

a. Reference Waveform Filters

A su' of 11 reference waveform station-events (9 earthquake, 2 presumed explosion) was selected for this evaluation of reference waveform matched filtering. These station-events are indicated in Tables IV-4 and IV-5 by an asterisk under the appropriate station number. The selection criteria were: good SNNR and shallow (less than 60 km) focus. The length of the reference waveforms was chosen in the following manner: for events at large epicentral distances, the length was selected to include possible multipath energy, since small changes in event epicenter location would not be expected to significantly change the multipath structure. This situation is reversed for events at small epicentral distances; for such events, small changes in event epicenter location could significantly change the multipath effects, if any. Therefore, the lengths of reference waveforms having small epicentral distances were chosen so as to exclude any possible multipath energy.

The major problem encountered in this form of matched filtering

was obtaining satisfactory reference waveforms. Due to the limited number of suitable events available, reference waveforms could be generated only for earthquakes recorded at stations 2, 3, 4, 6, and 7 and for presumed explosions recorded at stations 2 and 8. Also, it was desirable to have more than one reference waveform for application to events from a given region as recorded at a given station, since succeeding events from a region may have different source mechanisms, resulting in a poor match between reference waveform and test event. Due again to the limited size of the data base, it was possible to generate more than one reference waveform for stations 2 and 4 only (3 reference waveforms each). These difficulties will be alleviated in future work with the expansion of the data base.

b. Chirp Match Filters

Linear chirp filters were applied to all the station-events listed in Table IV-4 and 5. These chirp filters were specified and applied in the frequency domain, using a chirp bandpass of 0.023 to 0.59 Hz. After application of these filters, the data were inverse-transformed to obtain time domain chirp filter outputs.

The chirp filter response function is:

$$G(K) = \begin{cases} e^{i2\pi(C/N)(K-K_0)^2} & \text{if } K_L \le K \le K_H \\ 0 & \text{if } 0 \le K \le (K_L - K_H) \le K \le N/2 \end{cases}$$

$$G(-K) = G(K)^*$$

where

K is the discrete Fourier transform frequency index.

K_L and K_H are the lowest and highest frequencies in the passband.

K_0 is the frequency index at which zero phase shift occurs.

N is the number of transform points.

C is a parameter which controls the length of the corresponding time-domain waveform.

This yields a dispersive time-domain waveform with a linear group delay and essentially flat amplitude at all periods in the band corresponding to $K_L \leq K \leq K_H$ (Harley, 1971).

A minimum of five chirps were applied to each station-event. Their lengths were centered about the assumed optimum length (based on station-event separation) and differed by increments of ±100 seconds. The SNNR improvement for the station-event pair was then measured from the best, in terms of amplitude and shape, of the chirp responses. In each case, sufficient chirps were applied to ensure that the best chirp response was in fact found.

c. The Three Component Adaptive Processor (TCA)

The TCA processor forms a single channel filter in the frequency domain which passes energy having some of the characteristics of Love and Rayleigh waves. The filter is adaptive, since the data is segmented with a new filter designed for each segment. The filter weights depend on the signal behavior during the segment, rather than on the signal behavior for some fixed time before or after the output point.

The advantage of the TCA processor lies in the fact that it changes its filter weights to pass properly polarized energy. The output of the TCA processor is a filtered seismogram, not a new quantity.

To pass Rayleigh wave energy, the processor looks for signals which are 90° out of phase on the radial and vertical components. The Fourier transform of a segment of data is taken and the phase angle between radial and vertical components calculated at each frequency. (This angle will be $\frac{\pi}{2}$ for fundamental Rayleigh waves.) Some power of the sine of this phase angle constitutes the frequency domain filter weight for the corresponding frequency.

The Love wave filter calculates the angle, in space, between

the transverse direction and the direction of particle motion at each frequency. (This angle will be zero for pure Love wave energy.) Some power of the cosine of this angle is the filter weight. This filter is strictly a polarization filter for transverse waves (Lane, 1973).

4. SNNR Gains - Reference Waveform and Chirp Filters

Reference waveform filters were applied to 54 earthquake station-events and 10 presumed explosion station-events. Table IV-6 presents the results of the filter application. The amount of data available is too small to make meaningful statements about the behavior of individual reference waveform filters. Therefore, only the overall average SNNR improvements for the Reference waveform filter will be considered here. These average improvements are:

	SNNR IMPROVEMENT (dB)	
	RAYLEIGH	LOVE
EARTHQUAKE	3.5	0.1
PRESUMED EXPLOSION	3.8	-2.7

Unger (1973) shows an average optimum reference waveform filter gain of 4.0 to 8.0 dB for ALPA and events from Central Asia. However, we did not process these events in a similar exhaustive manner to obtain optimum gains. Further, these average values do not include the SNNR improvements derived from the match of a reference waveform with the event itself, since inclusion of these values would have given a high bias to the averages. The low SNNR (0.1 dB) improvement for earthquake Love waves is primarily due to poor quality (low SNNR) reference waveforms available from the VLPE. No or low amplitude Love waves would normally be expected from explosions, depending upon the amount of tectonic stain release accompanying the explosion, but the large negative gain shown above is again indicative of the poor quality of the reference waveforms available.

TABLE IV-6

RESULTS OF REFERENCE WAVEFORM FILTERING
(PAGE 1 OF 4)

EVENT	STA	RWF	m_b	RWF/TEST EV SEP	DETECTION BP LR	DETECTION BP LQ	DETECTION RWF LR	DETECTION RWF LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	TYPE
6	2	6	5.2	0	1	1	1	1	7.7	3.2	F
6	4	6	5.2	0	1	1	1	1	7.4	2.8	F
21	2	6	4.7	1255	1	1	1	1	3.0	-2.9	F
21	4	6	4.7	1255	2	2	2	2	---	---	F
44	2	6	5.4	744	1	1	1	1	2.3	3.3	F
44	4	6	5.4	744	1	1	1	1	5.5	5.9	F
45	2	6	4.6	731	3	3	3	3	---	---	F
45	4	6	4.6	731	3	3	3	3	---	---	F
75	2	6	4.5	537	2	2	2	2	---	---	F
75	4	6	4.5	537	2	2	2	2	---	---	F
108	4	6	4.7	440	2	2	1	2	---	---	F
302	4	6	3.2	1279	2	2	2	2	---	---	F
309	4	6	3.4	683	2	2	2	2	---	---	F
449	4	6	4.6	537	1	1	1	1	3.9	1.3	F
450	4	6	3.5	170	2	2	2	2	---	---	F
451	4	6	4.3	101	2	2	2	2	---	---	F
491	4	6	3.8	757	2	2	1	2	---	---	F
604	4	6	4.5	1279	3	3	3	3	---	---	F
6	2	21	5.2	1255	1	1	1	1	0.6	3.3	F
21	2	21	4.7	0	1	1	1	1	12.3	9.0	F
44	2	21	5.4	559	1	1	1	1	4.5	-3.7	F
45	2	21	4.6	657	3	3	3	1	---	---	F
75	2	21	4.5	757	2	2	2	2	---	---	F
6	2	44	5.2	744	1	1	1	1	2.7	-2.8	F
6	3	44	5.2	744	2	2	2	2	---	---	F
6	4	44	5.2	744	1	1	1	1	3.2	0.4	F
6	7	44	5.2	744	2	2	6	2	---	---	F

TABLE IV-6

RESULTS OF REFERENCE WAVEFORM FILTERING
(PAGE 2 OF 4)

EVENT	STA	RWF	m_b	RWF/TEST EV SEP	DETECTION BP LR	DETECTION BP LQ	DETECTION RWF LR	DETECTION RWF LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	TYPE
21	2	44	4.7	559	1	1	1	1	2.6	-6.6	F
21	3	44	4.7	559	2	2	1	2	---	---	F
21	4	44	4.7	559	2	2	6	2	---	---	F
21	7	44	4.7	559	2	2	6	2	---	---	F
44	2	44	5.4	0	1	1	1	1	11.0	11.5	F
44	3	44	5.4	0	1	1	1	1	8.6	12.2	F
44	4	44	5.4	0	1	1	1	1	11.3	9.0	F
44	7	44	5.4	0	1	1	1	1	12.2	11.4	F
45	2	44	4.6	135	3	3	3	6	---	---	F
45	3	44	4.6	135	3	3	6	6	---	---	F
45	4	44	4.6	135	3	3	6	3	---	---	F
45	7	44	4.6	135	3	3	3	3	---	---	F
75	2	44	4.5	210	2	2	1	1	---	---	F
75	3	44	4.5	210	2	2	2	2	---	---	F
75	4	44	4.5	210	2	2	2	2	---	---	F
75	7	44	4.5	210	2	2	2	2	---	---	F
108	3	44	4.7	305	2	2	2	6	---	---	F
108	4	44	4.7	305	2	2	2	2	---	---	F
108	7	44	4.7	305	2	2	6	6	---	---	F
120	3	44	4.9	143	1	1	1	1	6.9	-1.8	F
120	4	44	4.9	143	5	5	-	-	---	---	F
129	3	44	4.8	211	1	1	1	1	7.5	0.6	F
129	7	44	4.8	211	3	3	3	3	---	---	F
225	3	44	3.5	390	3	3	3	3	---	---	F
225	7	44	3.5	390	3	3	3	3	---	---	F
235	3	44	4.5	91	1	1	1	1	---	---	F
235	7	44	4.5	91	3	3	6	3	---	---	F

TABLE IV-6

RESULTS OF REFERENCE WAVEFORM FILTERING
(PAGE 3 OF 4)

EVENT	STA	RWF	m_b	RWF/TEST EV SEP	DETECTION BP LR	DETECTION BP LQ	DETECTION RWF LR	DETECTION RWF LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	TYPE
236	3	44	4.4	654	2	2	2	6	---	---	E
238	3	44	5.1	371	2	2	1	1	---	---	E
238	7	44	5.1	371	3	3	1	3	---	---	E
302	3	44	3.2	595	2	2	2	2	---	---	E
302	4	44	3.2	595	2	2	2	2	---	---	E
309	3	44	3.4	91	2	2	2	2	---	---	E
309	4	44	3.4	91	2	2	2	2	---	---	E
449	4	44	4.6	508	1	1	1	1	0.6	0.5	E
450	4	44	3.5	708	2	2	2	2	---	---	E
451	4	44	4.3	821	2	2	2	2	---	---	E
470	4	44	4.7	865	5	5	-	-	---	---	E
491	4	44	3.8	311	2	2	2	2	---	---	E
510	4	44	4.0	224	5	5	-	-	---	---	E
604	4	44	4.5	595	3	3	3	3	---	---	E
662	4	44	4.6	33	5	5	-	-	---	---	E
45	6	129	4.6	275	3	3	3	3	---	---	E
75	6	129	4.5	116	3	3	3	3	---	---	E
108	6	129	4.7	125	2	1	2	1	---	1.0	E
120	6	129	4.9	342	1	1	1	1	0.8	-0.2	E
129	6	129	4.8	0	1	1	1	1	6.6	0.7	E
225	6	129	3.5	412	2	2	2	2	---	---	E
302	6	129	3.2	729	2	2	2	2	---	---	E
309	6	129	3.4	198	2	2	2	2	---	---	E
317	6	129	3.8	113	2	2	2	2	---	---	E
319	6	129	3.5	146	2	2	2	2	---	---	E
320	6	129	3.9	41	2	1	2	1	---	-3.3	E
470	6	129	4.7	673	3	3	3	3	---	---	E

TABLE IV-6

RESULTS OF REFERENCE WAVEFORM FILTERING
(PAGE 4 OF 4)

EVENT	STA	RWF	m_b	RWF/TEST EV SEP	DETECTION BP LR	DETECTION BP LQ	DETECTION RWF LR	DETECTION RWF LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	TYPE
6	4	449	5.2	537	1	1	1	1	3.7	1.4	E
21	4	449	4.7	832	2	2	2	2	---	---	E
44	4	449	5.4	508	1	1	1	1	4.7	5.0	E
45	4	449	4.6	597	3	3	3	3	---	---	E
108	4	449	4.7	345	2	2	2	2	---	---	E
120	4	449	4.9	604	5	5	-	-	---	---	E
302	4	449	3.2	842	2	2	2	2	---	---	E
309	4	449	3.4	519	2	2	2	2	---	---	E
449	4	449	4.6	0	1	1	1	1	9.2	1.9	E
450	4	449	3.5	395	2	2	2	2	---	---	E
451	4	449	4.3	554	2	2	2	2	---	---	E
470	4	449	4.7	614	5	5	-	-	---	---	E
491	4	449	3.8	306	2	2	2	1	---	---	E
510	4	449	4.0	709	5	5	-	-	---	---	E
604	4	449	4.5	842	2	2	6	6	---	---	E
662	4	449	4.6	539	5	5	-	-	---	---	E
339	8	797	5.5	7	5	5	-	-	---	---	X
456	8	797	4.4	13	3	3	3	3	---	---	X
626	8	797	5.2	0	3	3	3	3	---	---	X
652	8	797	5.7	3330	1	1	1	1	1.9	-2.3	X
672	2	797	5.5	31	2	2	6	1	---	---	X
672	8	797	5.5	31	3	3	3	3	---	---	X
679	2	797	6.3	2837	1	1	1	1	1.3	0.7	X
679	8	797	6.3	2837	1	1	1	1	8.1	-6.4	X
797	2	797	5.7	0	1	1	1	1	8.9	4.8	X
797	8	797	5.7	0	1	1	1	1	10.4	1.1	X

The effect of distance between reference waveform event and the test event on the SNNR improvement is shown in Figure IV-21, where SNNR improvement in dB is plotted against reference waveform-test event separation. We expect the SNNR improvement to decrease with increasing separation between reference waveform and test event. A general trend of -3dB per 1000 km was observed for ALPA data (Strauss, 1973). A least-means-square-error straight-line fitted to these data and the 95% confidence limits are shown in Figure IV-21. A slope of -3dB per 1000 km was obtained and corresponds to that for ALPA data.

Chirp filters were applied to 84 earthquake station-events and 24 presumed explosion station-events. Table IV-7 presents the results of the application of these chirp filters. The overall average SNNR improvements for the chirp filters are:

	IMPROVEMENT (dB)	
	RAYLEIGH	LOVE
EARTHQUAKE	3.5	2.6
PRESUMED EXPLOSION	3.7	3.5

Thus, for chirp filters, the Rayleigh wave SNNR improvements were slightly better than the Love wave SNNR improvements for earthquake data and about the same for presumed explosion data.

The chirp length data is summarized in Figures IV-22 and IV-23 for the transverse and vertical components respectively. The chirp lengths plotted are those chirp lengths which give the best improvements. The corresponding distances are great circle distances in kilometers between event epicenter and station. The chirp lengths applied to presumed explosions are indicated by open circles while those applied to earthquakes are indicated by dots. A least-mean-square-error fit was made for the data points of each plot.

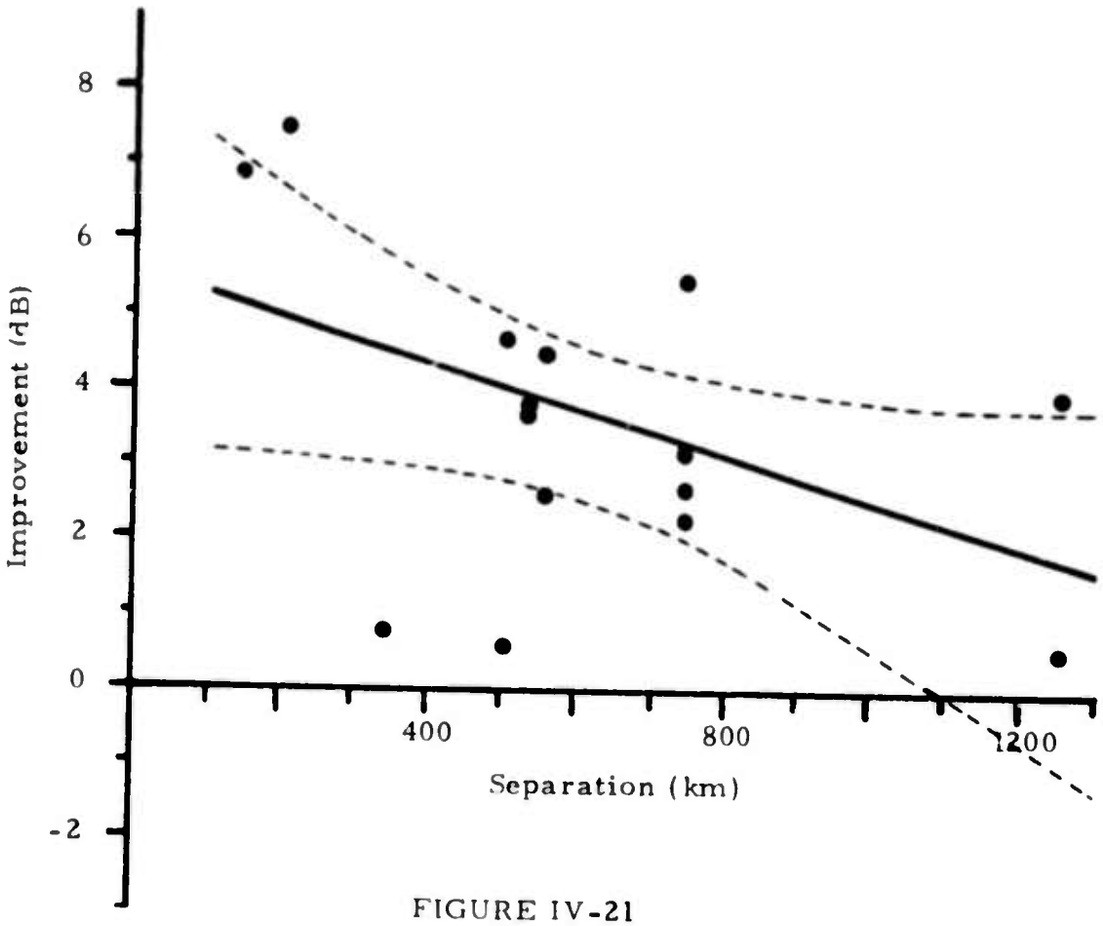


FIGURE IV-21

REFERENCE WAVEFORM FILTER IMPROVEMENT VERSUS
REFERENCE WAVEFORM/TEST EVENT SEPARATION
(VERTICAL COMPONENT)

TABLE IV-7

RESULTS OF CHIRP FILTERING
(PAGE 1 OF 5)

EVENT	STA	m_b	DELTA	DETECTION BP LR	DETECTION BP LQ	DETECTION CHIRP LR	DETECTION CHIRP LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	OPTIMUM CHIRP LENGTH LR	OPTIMUM CHIRP LENGTH LQ	TYPE
6	2	5.2	2881	1	1	1	1	0.9	0.6	100	100	E
6	3	5.2	7106	2	2	2	2	---	---	---	---	E
6	4	5.2	7216	1	1	1	1	3.7	2.5	300	200	E
6	7	5.2	10496	2	2	2	2	---	---	---	---	E
21	2	4.7	3504	1	1	1	1	3.6	1.7	300	400	E
21	3	4.7	7746	2	2	1	2	---	---	400	---	E
21	4	4.7	6251	2	2	1	2	---	---	500	---	E
21	7	4.7	10315	2	2	2	2	---	---	---	---	E
44	2	5.4	3168	1	1	1	1	1.7	0.9	300	500	E
44	3	5.4	7568	1	1	1	1	3.1	5.5	700	1100	E
44	4	5.4	6653	1	1	1	1	5.2	2.2	1000	400	E
44	7	5.4	10463	1	1	1	1	7.1	7.4	500	300	E
45	2	4.6	2920	3	3	3	6	---	---	---	300	E
45	3	4.6	7692	3	3	3	3	---	---	---	---	E
45	4	4.6	6886	3	3	6	6	---	---	500	500	E
45	6	4.6	5247	3	3	1	1	---	---	1300	1300	E
45	7	4.6	10695	3	3	3	6	---	---	---	200	E
75	2	4.5	2959	2	2	1	6	---	---	100	100	E
75	3	4.5	7492	2	2	1	2	---	---	700	---	E
75	4	4.5	6912	2	2	2	2	---	---	---	---	E
75	6	4.5	5204	3	3	3	3	---	---	---	---	E
75	7	4.5	10577	2	2	2	2	---	---	---	---	E
108	3	4.7	7385	2	2	2	2	---	---	---	---	E
108	4	4.7	6926	2	2	2	2	---	---	---	---	E
108	6	4.7	5181	2	1	2	1	---	3.8	---	1300	E
108	7	4.7	10513	2	2	2	2	---	---	---	---	E
120	3	4.9	7700	1	1	1	1	4.5	2.6	700	700	E

TABLE IV-7

RESULTS OF CHIRP FILTERING
(PAGE 2 OF 5)

EVENT	STA	m_b	DELTA	DETECTION BP LR	DETECTION BP LQ	DETECTION CHIRP LR	DETECTION CHIRP LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	OPTIMUM CHIRP LENGTH LR	OPTIMUM CHIRP LENGTH LQ	TYPE
120	4	4.9	6663	5	5	-	-	---	---	---	---	E
120	6	4.9	5057	1	1	1	1	2.0	1.8	1100	1100	E
129	3	4.8	7419	1	1	1	1	5.7	6.0	1000	1000	E
129	6	4.8	5090	1	1	1	1	3.5	0.4	1200	1200	E
129	7	4.8	10464	3	3	3	3	---	---	---	---	E
225	3	3.5	7411	3	3	3	3	---	---	---	---	E
225	6	3.5	4723	2	2	2	2	---	---	---	---	E
225	7	3.5	10196	3	3	3	3	---	---	---	---	E
235	3	4.5	7616	1	1	1	1	---	---	---	---	E
235	7	4.5	10624	3	3	3	3	---	---	---	---	E
236	3	4.4	7126	2	2	1	2	---	---	700	---	E
236	7	4.4	10449	5	5	-	-	---	---	---	---	E
238	3	5.1	7859	2	2	1	1	---	---	900	1000	E
238	7	5.1	10576	3	3	3	3	---	---	---	---	E
302	3	3.2	7724	2	2	2	2	---	---	---	---	E
302	4	3.2	6206	2	2	2	2	---	---	---	---	E
302	6	3.2	4663	2	2	6	2	---	---	1000	---	E
309	3	3.4	7516	2	2	1	6	---	---	500	900	E
309	4	3.4	6855	2	2	2	2	---	---	---	---	E
309	6	3.4	5193	2	2	6	2	---	---	1000	---	E
317	1	3.8	9523	2	2	2	2	---	---	---	---	E
317	5	3.8	4443	2	2	2	2	---	---	---	---	E
317	6	3.8	5137	2	2	2	2	---	---	---	---	E
317	8	3.8	10636	2	2	2	2	---	---	---	---	E
317	C	3.8	11396	2	2	2	2	---	---	---	---	E
319	1	3.5	9651	2	2	2	2	---	---	---	---	E
319	5	3.5	4369	5	5	-	-	---	---	---	---	E

TABLE IV-7

RESULTS OF CHIRP FILTERING
(PAGE 3 OF 5)

EVENT	STA	m_b	DELTA	DETECTION BP LR	DETECTION BP LQ	DETECTION CHIRP LR	DETECTION CHIRP LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	OPTIMUM CHIRP LENGTH LR	OPTIMUM CHIRP LENGTH LQ	TYPE
319	A	3.5	5000	2	2	2	2	---	---	---	---	E
319	B	3.5	10636	5	5	-	-	---	---	---	---	E
319	C	3.5	11296	5	5	-	-	---	---	---	---	E
320	1	3.9	9593	2	2	2	2	---	---	---	---	E
320	5	3.9	4360	5	5	-	-	---	---	---	---	E
320	A	3.9	5082	2	1	1	1	---	-2.0	1200	600	E
320	B	3.9	10702	5	5	-	-	---	---	---	---	E
320	C	3.9	11406	5	5	-	-	---	---	---	---	E
384	7	4.3	10407	1	1	1	1	2.4	3.4	200	200	E
384	B	4.3	11361	2	2	2	2	---	---	---	---	E
384	C	4.3	11661	3	3	3	3	---	---	---	---	E
449	4	4.6	6686	1	1	1	1	6.7	1.8	900	400	E
449	5	4.6	4393	3	3	3	3	---	---	---	---	E
449	B	4.6	10523	1	2	1	2	-1.0	---	1200	---	E
450	4	3.5	7057	2	2	2	2	---	---	---	---	E
450	5	3.5	4776	2	2	2	2	---	---	---	---	E
450	B	3.5	10242	2	2	2	2	---	---	---	---	E
451	4	4.3	7210	2	2	1	2	---	---	1000	---	E
451	5	4.3	4928	2	2	1	2	---	---	500	---	E
451	B	4.3	10139	1	1	1	1	7.0	6.0	700	700	E
470	1	4.7	9166	1	1	1	1	0.4	-1.1	800	1300	E
470	4	4.7	7269	5	5	-	-	---	---	---	---	E
470	5	4.7	4984	3	3	1	3	---	---	300	---	E
470	6	4.7	5379	3	3	3	3	---	---	---	---	E
470	B	4.7	10101	3	3	3	3	---	---	---	---	E
491	1	3.8	9861	2	2	2	2	---	---	---	---	E
491	4	3.8	6549	2	2	2	2	---	---	---	---	E

TABLE IV-7

RESULTS OF CHIRP FILTERING
(PAGE 4 OF 5)

EVENT	STA	m_b	DELTA	DETECTION BP LR	DETECTION BP LQ	DETECTION CHIRP LR	DETECTION CHIRP LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	OPTIMUM CHIRP LENGTH LR	OPTIMUM CHIRP LENGTH LQ	TYPE
491	5	3.8	4126	2	2	2	2	---	---	---	---	E
491	8	3.8	10828	2	2	2	2	---	---	---	---	E
491	9	3.8	11317	5	5	-	-	---	---	---	---	E
510	1	4.0	9720	2	2	2	6	---	---	---	700	E
510	4	4.0	6686	5	5	-	-	---	---	---	---	E
510	5	4.0	4006	2	2	1	2	---	---	300	---	E
510	8	4.0	11173	2	2	2	2	---	---	---	---	E
510	9	4.0	11765	2	2	2	2	---	---	---	---	E
536	1	4.3	9593	2	2	2	2	---	---	---	---	E
536	5	4.3	4360	5	5	-	-	---	---	---	---	E
604	4	4.5	6206	3	3	3	3	---	---	---	---	E
604	5	4.5	3605	3	3	3	3	---	---	---	---	E
604	8	4.5	11348	3	3	3	3	---	---	---	---	E
662	1	4.6	9624	2	2	2	2	---	---	---	---	E
662	4	4.6	5781	5	5	-	-	---	---	---	---	E
662	5	4.6	4182	2	2	1	2	---	---	500	---	E
662	9	4.6	10970	5	5	-	-	---	---	---	---	E
116	2	5.5	6605	2	2	1	2	---	---	900	---	X
116	4	5.5	6273	5	5	-	-	---	---	---	---	X
116	6	5.5	4340	2	2	2	2	---	---	---	---	X
260	3	5.5	6628	1	2	1	2	4.2	---	900	---	X
260	6	5.5	4292	2	2	2	2	---	---	---	---	X
260	7	5.5	9526	2	2	2	2	---	---	---	---	X
339	1	5.5	10217	2	2	2	6	---	---	---	500	X
339	5	5.5	4288	2	2	2	2	---	---	---	---	X
339	6	5.5	4318	2	2	2	2	---	---	---	---	X
339	7	5.5	9551	2	2	1	2	---	---	200	---	X

TABLE IV-7

RESULTS OF CHIRP FILTERING
(PAGE 5 OF 5)

EVENT	STA	m_b	DELTA	DETECTION BP LR	DETECTION BP LQ	DETECTION CHIRP LR	DETECTION CHIRP LQ	SNNR IMPROVEMENT (dB) LR	SNNR IMPROVEMENT (dB) LQ	OPTIMUM CHIRP LENGTH LR	OPTIMUM CHIRP LENGTH LQ	TYPE
339	A	5.5	10341	2	5	6	5	---	---	1200	---	X
339	S	5.5	10562	5	5	-	-	---	---	---	---	X
456	4	4.4	6227	2	2	1	2	---	---	800	---	X
456	5	4.4	4271	3	3	3	3	---	---	---	---	X
456	A	4.4	10379	2	2	2	2	---	---	---	---	X
626	1	5.2	10224	2	2	2	6	---	---	---	300	X
626	4	5.2	6229	1	2	1	2	0.3	---	600	---	X
626	5	5.2	4281	2	2	2	2	---	---	---	---	X
626	A	5.2	10346	2	2	2	2	---	---	---	---	X
652	1	5.7	12265	5	5	-	-	---	---	---	---	X
652	4	5.7	4181	5	5	-	-	---	---	---	---	X
652	5	5.7	2524	5	5	-	-	---	---	---	---	X
652	A	5.7	11709	5	5	-	-	---	---	---	---	X
672	2	5.5	3939	2	2	2	2	---	---	---	---	X
672	4	5.5	6201	5	5	-	-	---	---	---	---	X
672	5	5.5	4266	2	2	2	2	---	---	---	---	X
672	A	5.5	10349	2	2	2	2	---	---	---	---	X
679	2	6.3	6626	1	1	1	1	2.3	2.5	200	400	X
679	4	6.3	4813	1	1	1	1	4.7	2.5	400	400	X
679	5	6.3	5025	1	1	1	1	4.5	4.6	500	500	X
679	A	6.3	9188	1	1	1	1	5.9	4.4	1100	1200	X

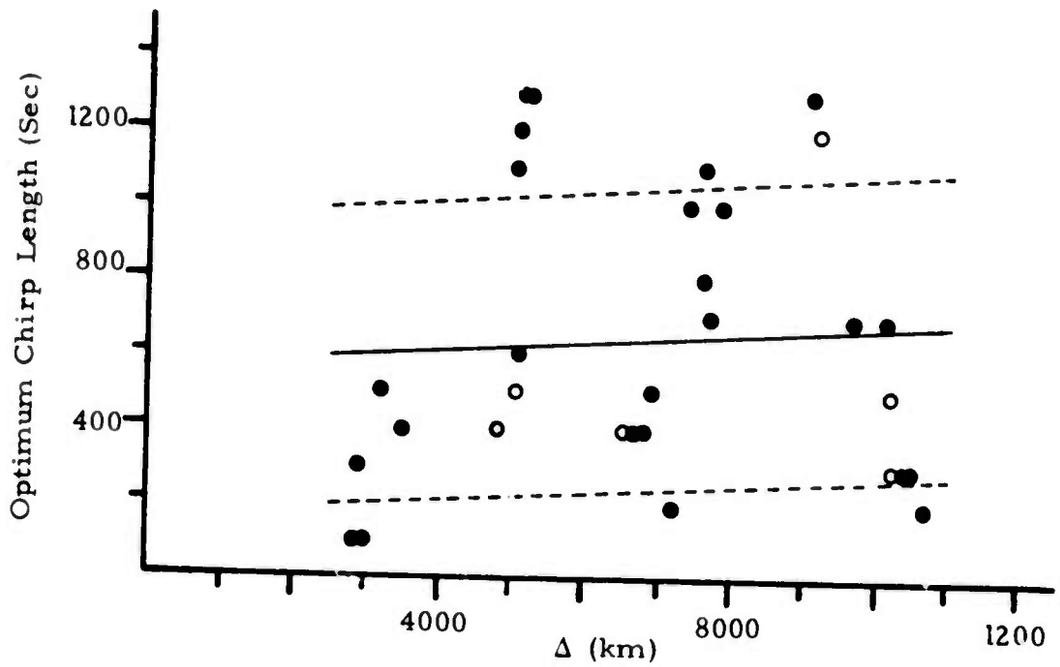


FIGURE IV-22

CHIRP FILTER LENGTH VERSUS DISTANCE
(TRANSVERSE COMPONENT)

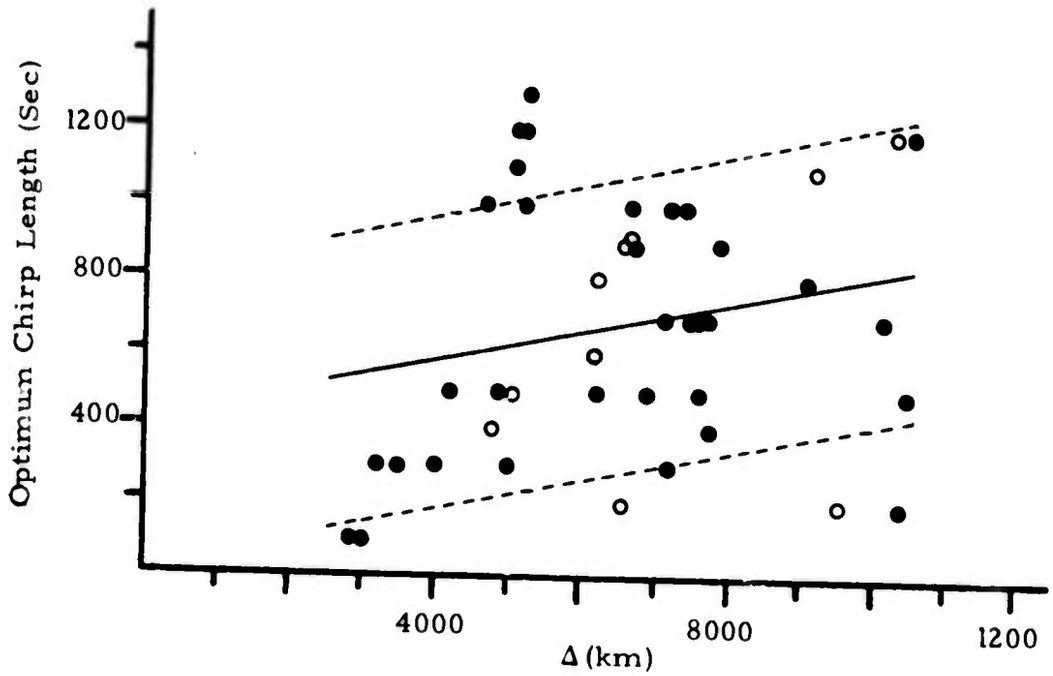


FIGURE IV-23

CHIRP FILTER LENGTH VERSUS DISTANCE
(VERTICAL COMPONENT)

The scatter in the plotted data is so great that little can be deduced from the plots. In order to ensure that the optimum chirp length will be used at least 70% of the time, it will be necessary to use 9 chirps each 100 seconds longer than the previous and centered about the least-square-error fit (Heiting et al, 1972). Therefore, in future work, at least this many chirps will be used.

5. Improvements in Surface-Wave Detection

Figures IV-24, 25, 26, and 27 illustrate the improvement in surface-wave detection made possible by application of matched filters. The first three show detection improvements of station-events; the fourth figure shows detection improvements of the network(i.e. detection by any one of the matched filters is considered as a detection of that event, presumed explosion or earthquake).

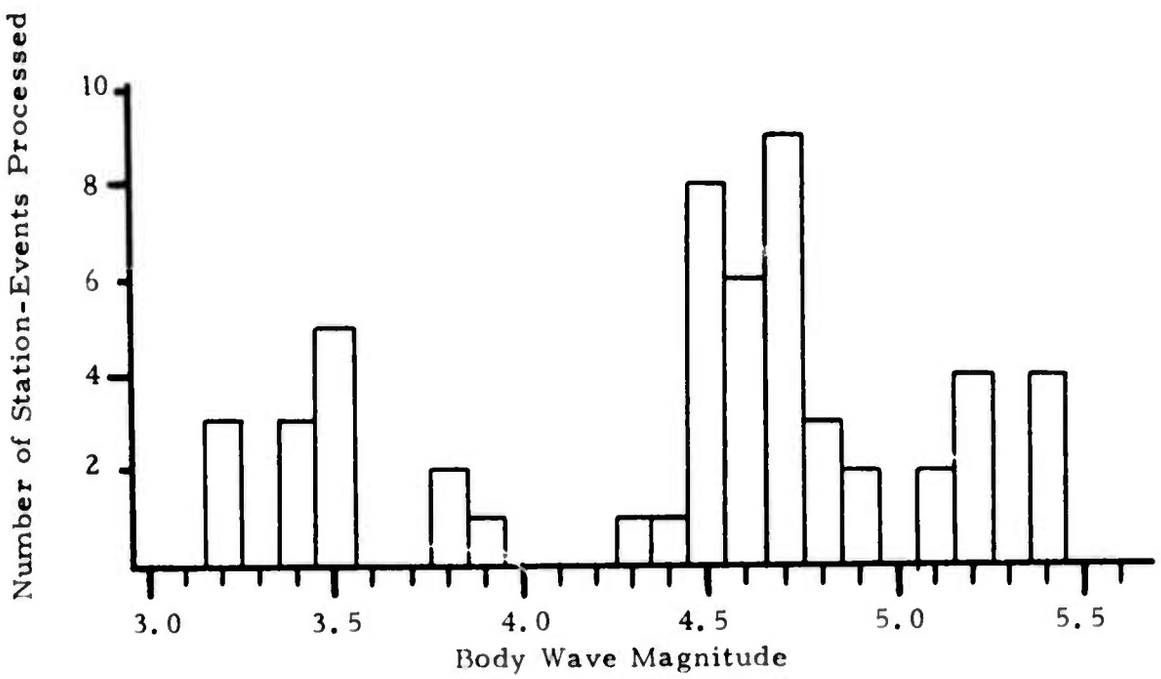
The percent detection levels to be discussed but not shown in the figures, are maximum likelihood estimates and are subject to large errors due to the small population considered.

The notch in the detection plots at $m_b = 5.1$ is an earthquake with a depth of 130 km and relatively low surface-wave excitation.

With this in mind, the following points also should be considered when viewing these figures:

Figure IV-24: Reference Waveform Filter Versus Bandpass Filter
The 50 percent detection level for the bandpass filter is $m_b = 5.00 \pm 0.65$. The 50 percent detection level for the reference waveform filter is 4.34 ± 0.62. Reference waveform filters detected 63 percent of the station-event pairs and bandpass filters detected 28 percent.

Figure IV-25: Chirp Filter Versus Bandpass Filter
The 50 percent detection level for the bandpass filter



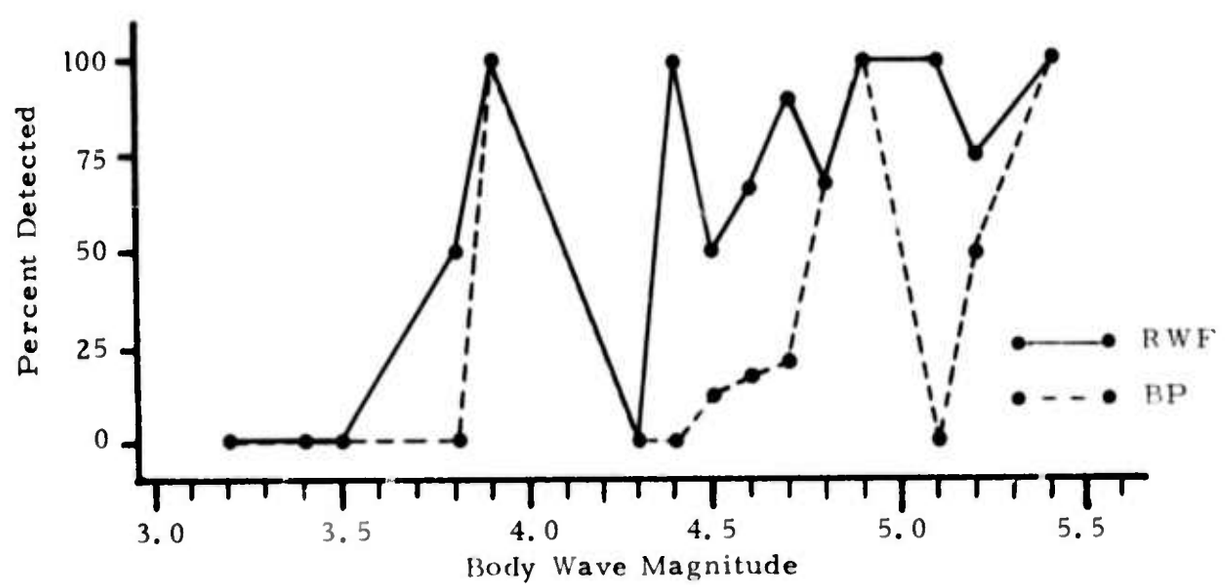
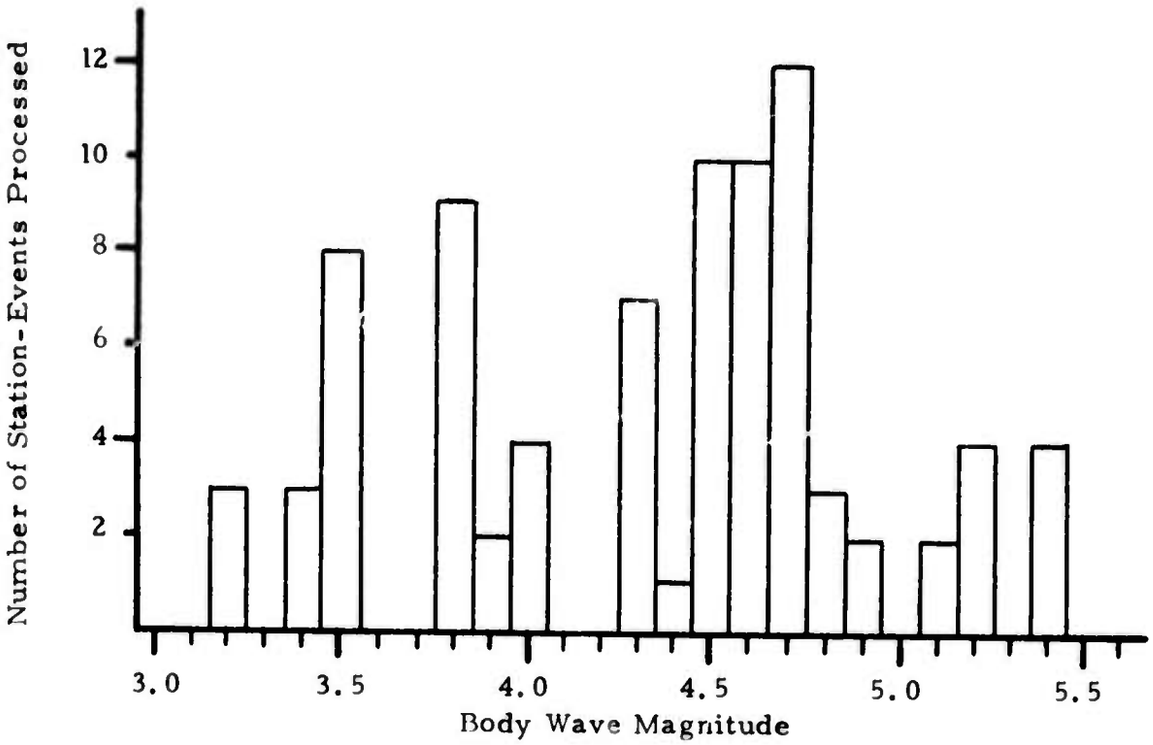


FIGURE IV-24

SURFACE WAVE DETECTION DATA FOR
REFERENCE WAVEFORM FILTER VERSUS BANDPASS FILTER



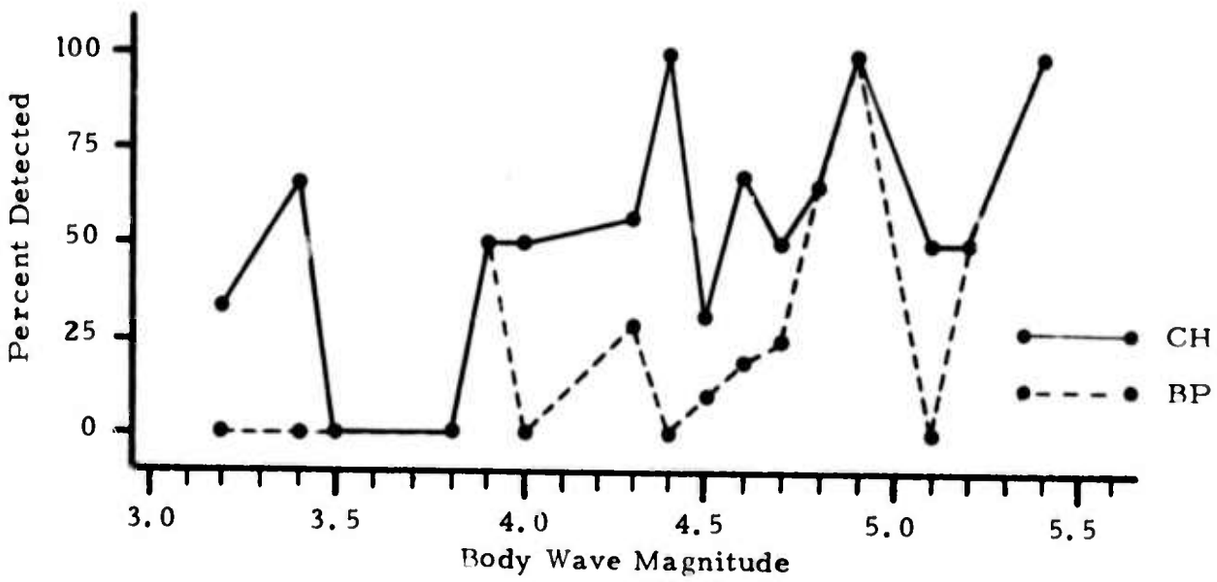


FIGURE IV-25

SURFACE WAVE DETECTION DATA FOR
CHIRP FILTER VERSUS BANDPASS FILTER

is $m_b = 4.99 \pm 0.63$. The 50 percent level for the chirp filter is $m_b = 4.46 \pm 0.08$. Chirp filters detected 44 percent of the station-event pairs and bandpass filters detected 23 percent.

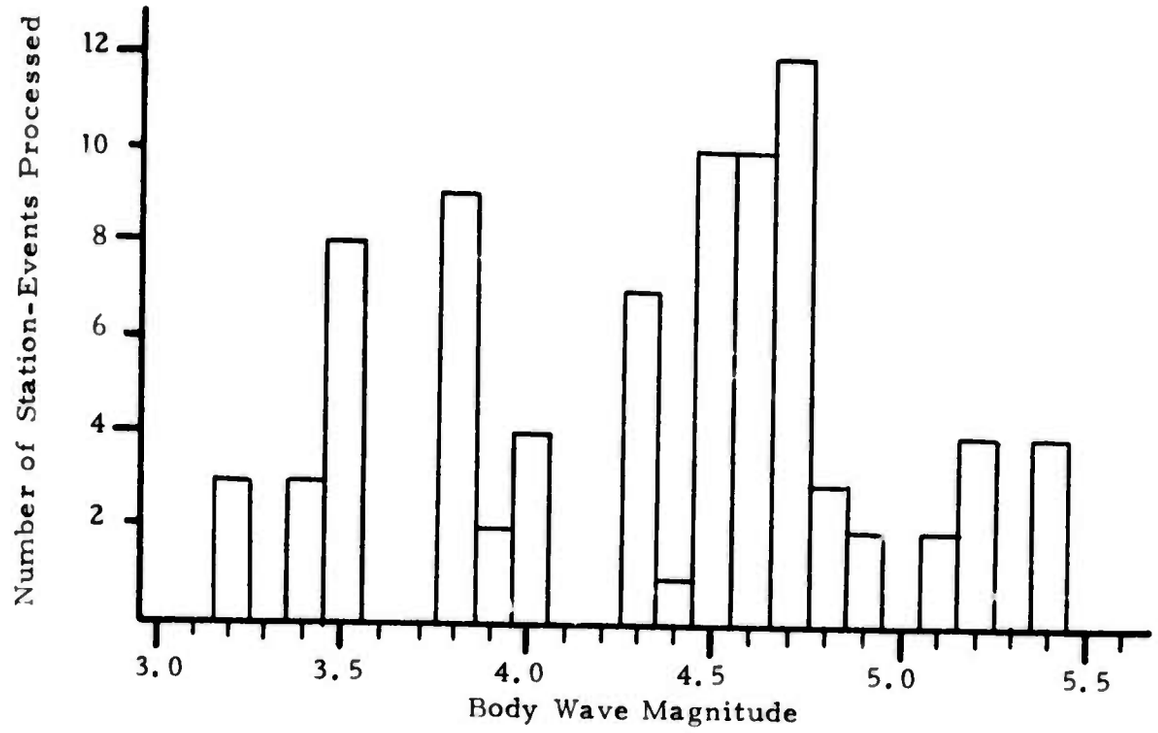
Figure IV-26: Combined Reference Waveform and Chirp Filters Versus Bandpass Filters

A station-event is considered as a detection if either reference waveform or chirp filter yielded a detection. The 50 percent detection level for the bandpass filter is $m_b = 4.99 \pm 0.63$. The 50 percent detection level for combined matched filters is $m_b = 4.17 \pm 0.78$. Matched filters detected 56 percent of the station-event pairs and bandpass filters detected 23 percent.

Figure IV-27: Network Matched Filter Versus Network Bandpass Filter

An event is considered detected when one or more stations detects with either of the matched filters and similarly for the bandpass filter. The 50 percent level for bandpass filter is $m_b = 4.47 \pm 0.63$. The 50 percent level for the matched filters is $m_b = 3.53$. Matched filters detected 82 percent of the events and bandpass filter 44 percent.

The results of the TCA processing are shown in Figure IV-28. The maximum likelihood estimate indicates that the TCA processor improved the 50 percent detection level from an $m_b = 4.74 \pm 0.57$ to an $m_b = 4.46 \pm 0.80$. Further, the TCA processor detected 44 percent of the station-event pairs as compared to 24 percent detected by the bandpass filter. The 50 percent detection level and percentages of station-events detected are comparable to the values determined for the chirp filter, Figure IV-25.



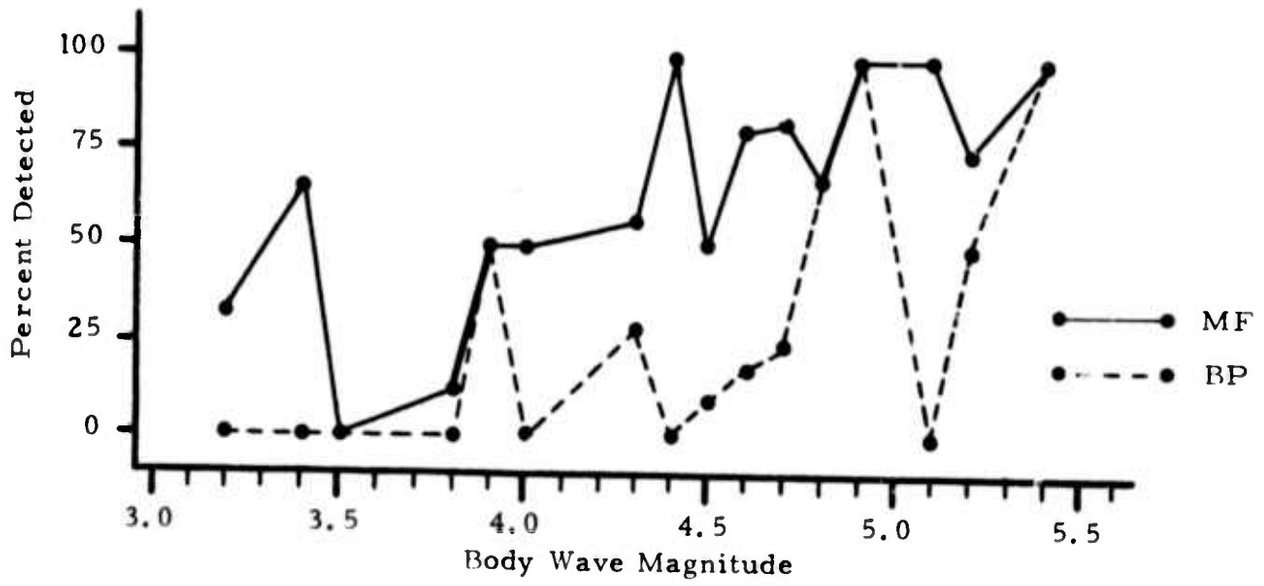
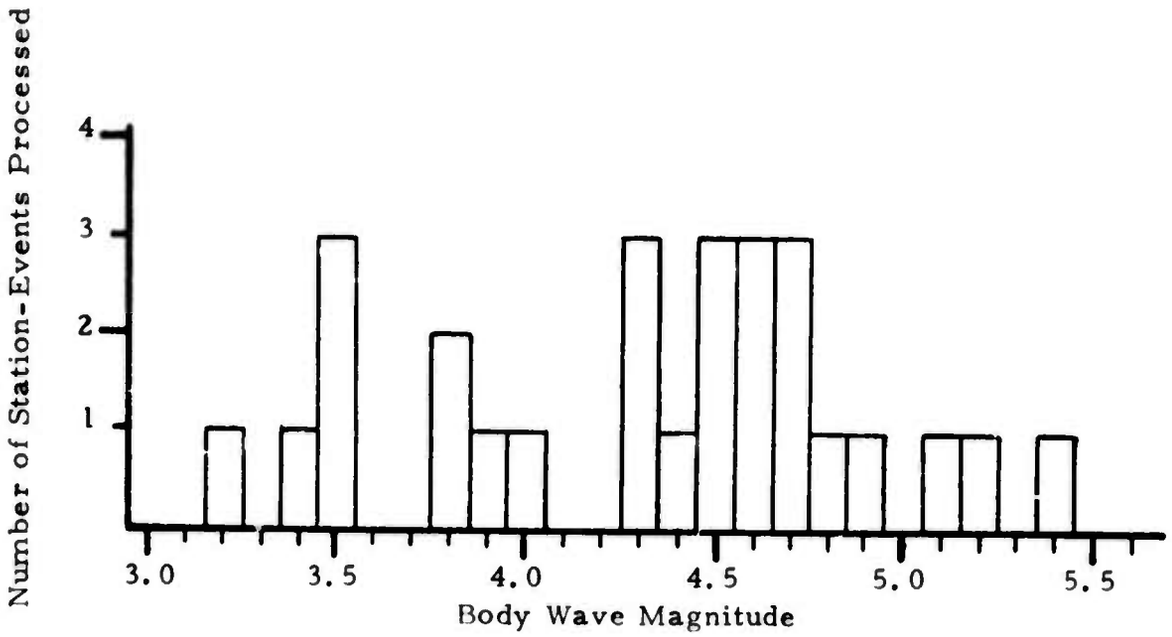


FIGURE IV-26

SURFACE WAVE DETECTION DATA FOR COMBINED REFERENCE WAVEFORM AND CHIRP FILTERS VERSUS BANDPASS FILTER



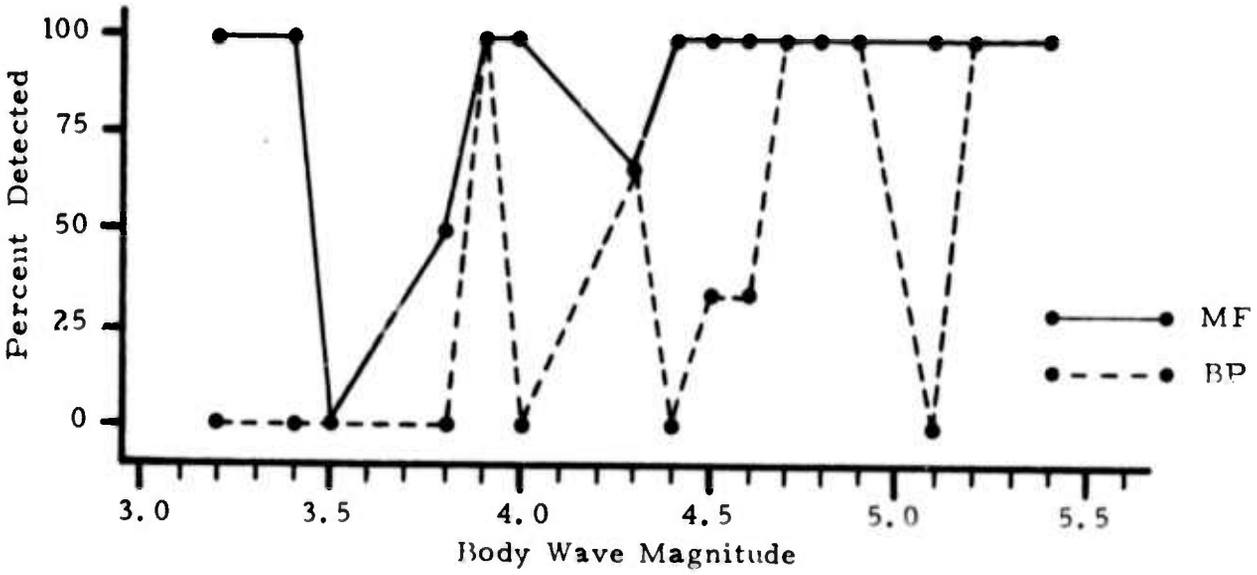
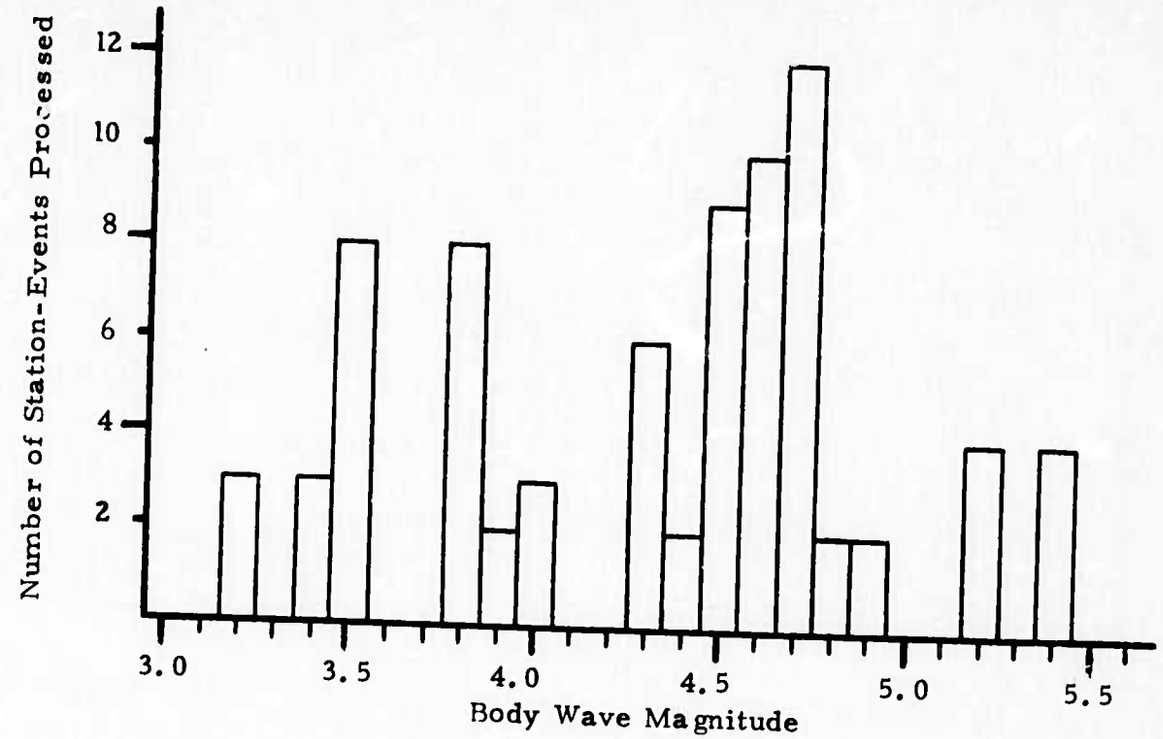


FIGURE IV-27

SURFACE WAVE DETECTION DATA FOR THE NETWORK MATCHED FILTER VERSUS NETWORK BANDPASS FILTER



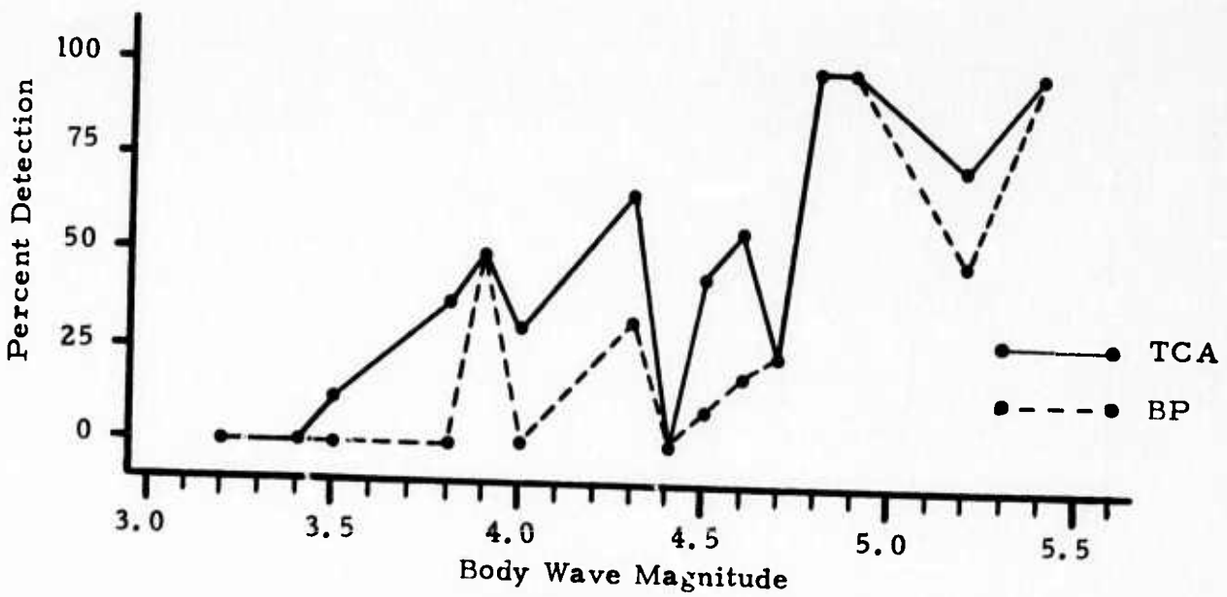


FIGURE IV-28

SURFACE WAVE DETECTION DATA FOR THE TCA PROCESSOR VERSUS BANDPASS FILTER

The large standard deviations given throughout this analysis are indicative of the small data base and this is obvious from the figures. Thus, little weight should be given to the reported 50 percent detection levels. However, the overall detection percentages show that about twice as many station-events or events are detected by any of the filters as compared to those detected by the bandpass filter.

6. Summary and Conclusions

The average SNNR improvements in dB for reference waveform and chirp filters are as follows:

		RAYLEIGH	LOVE
REFERENCE WAVEFORM FILTER	EARTHQUAKES	3.5	0.1
	PRESUMED EXPLOSIONS	3.8	-2.7
CHIRP FILTER	EARTHQUAKES	3.5	2.6
	PRESUMED EXPLOSIONS	3.7	3.5

Thus, reference waveform and chirp filters yielded essentially the same average SNNR dB improvements when matched with Rayleigh waves. When matched with Love waves, the chirp filters gave much higher SNNR dB improvement than did the reference waveform. This is primarily due to the difficulty of obtaining uncontaminated representative Love waves as filters. Therefore, in terms of overall average SNNR improvements the chirp filters perform better than the reference waveform filters for this ensemble of events.

Clearly, the application of matched filters to the VLPE does significantly improve detection as is evidenced by the factor of two increase in overall detections. However, the small data base precludes the determination of definite detection thresholds and comparisons with either the single VLPE stations and networks discussed in part B-3 or the SNNR dB improvements.

The preliminary analysis of the TCA processor yielded

detection results comparable to those for the chirp filter. In future studies, the SNNR gains will be determined for the TCA processor along with detection thresholds for various combinations of the TCA processor and matched filters on single stations and networks.

SECTION V
VLPE DISCRIMINATION CAPABILITY

A. INTRODUCTION

This section presents the capability of the single VLPE stations and the VLPE network to discriminate between presumed underground explosions and earthquakes located in Eurasia.

Lambert and Becker (1973) presented a preliminary evaluation of M_s versus m_b discrimination capabilities of VLPE single stations, the VLPE network, and the VLPE-ALPA-NORSAR network. The above report consisted of a data base comprised of 545 Eurasian events or the analysis of 2130 event-station pairs. The present report includes those data plus 329 Eurasian events or the analysis of 1447 additional event-station pairs.

In part B. of this section we discuss M_s versus m_b for single stations and the VLPE network. Part C. includes Love to Rayleigh wave amplitude ratios as a function of station, region, and network. Part D. presents preliminary radiation pattern results and discusses the capability of the VLPE to discern radiation patterns of surface waves detected at far field.

B. M_s(T = 20 SECONDS) VERSUS m_b

1. Single VLPE Stations

The surface wave magnitude (M_s) is defined as (Harley, 1972),

$$M_s = \log A/T + \log \Delta + 1.12$$

where M_s = surface wave magnitude.

A = peak-to-peak displacement in $m\mu$,

T = period in seconds for A,

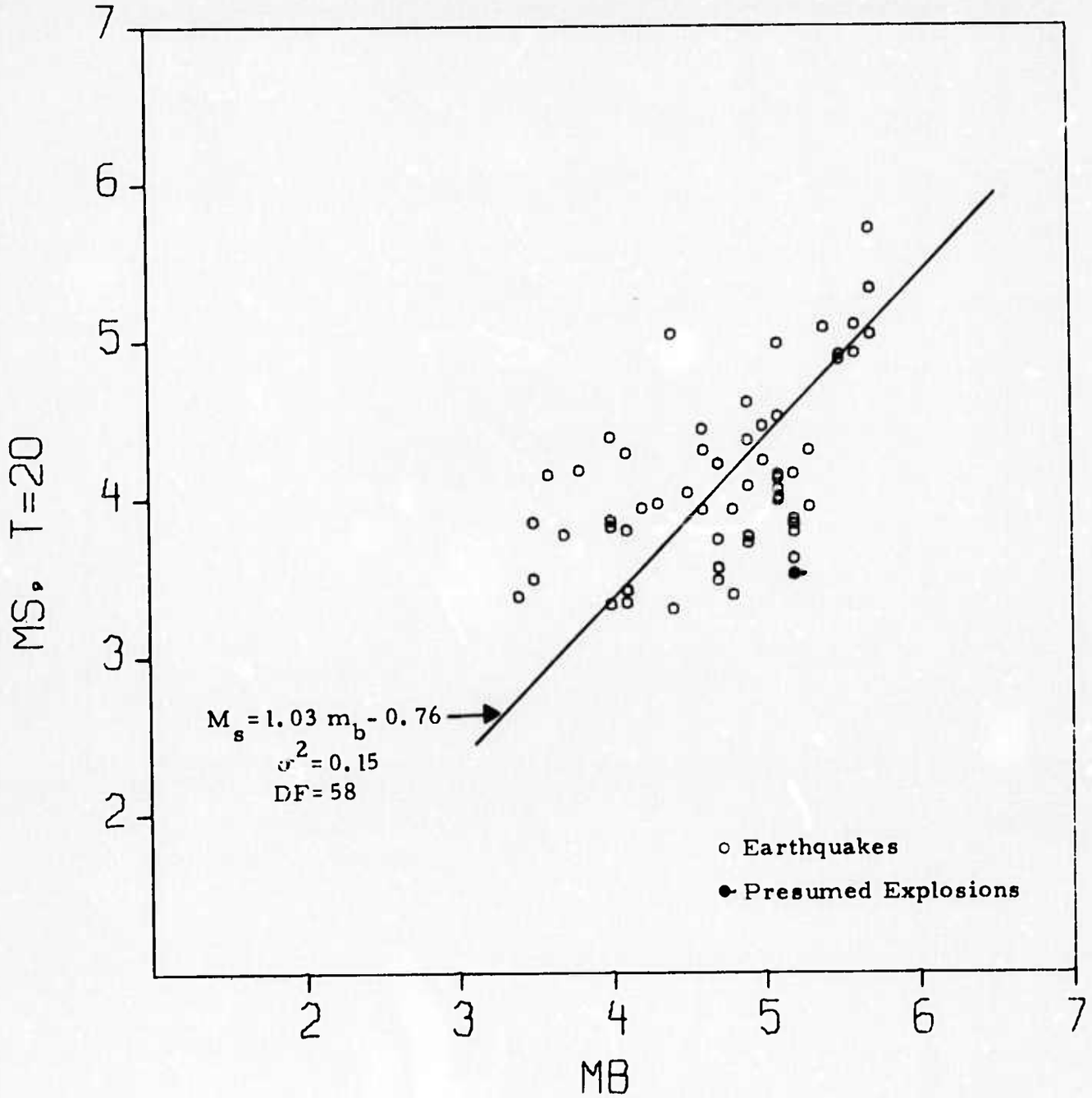
Δ = epicentral distance in degrees.

As previously indicated in II-B, all body wave magnitudes (m_b) were reviewed, where possible, and only teleseismic m_b determinations were considered as valid estimates.

Figures V-1 through V-11 show M_s (T=20 seconds) versus m_b for CTA, CHG, FBK, TLO, EIL, KON, OGD, KIP, ALQ, ZLP, and MAT. Further, best fit straight lines are shown for the $M_s :: m_b$ earthquake populations. Previously, the general trend for a population of M_s and m_b measurements has been determined by considering one magnitude as the independent variable and the other as the dependent variable. However, in this study we consider M_s and m_b to be independent of each other and determine a best linear fit by minimizing the distances normal to a line and the data points (Appendix V-A). These lines are shown on each figure in the form of $M_s = \beta m_b + a$, along with the variance σ^2, and the degrees of freedom (DF = n-2; n = number of points).

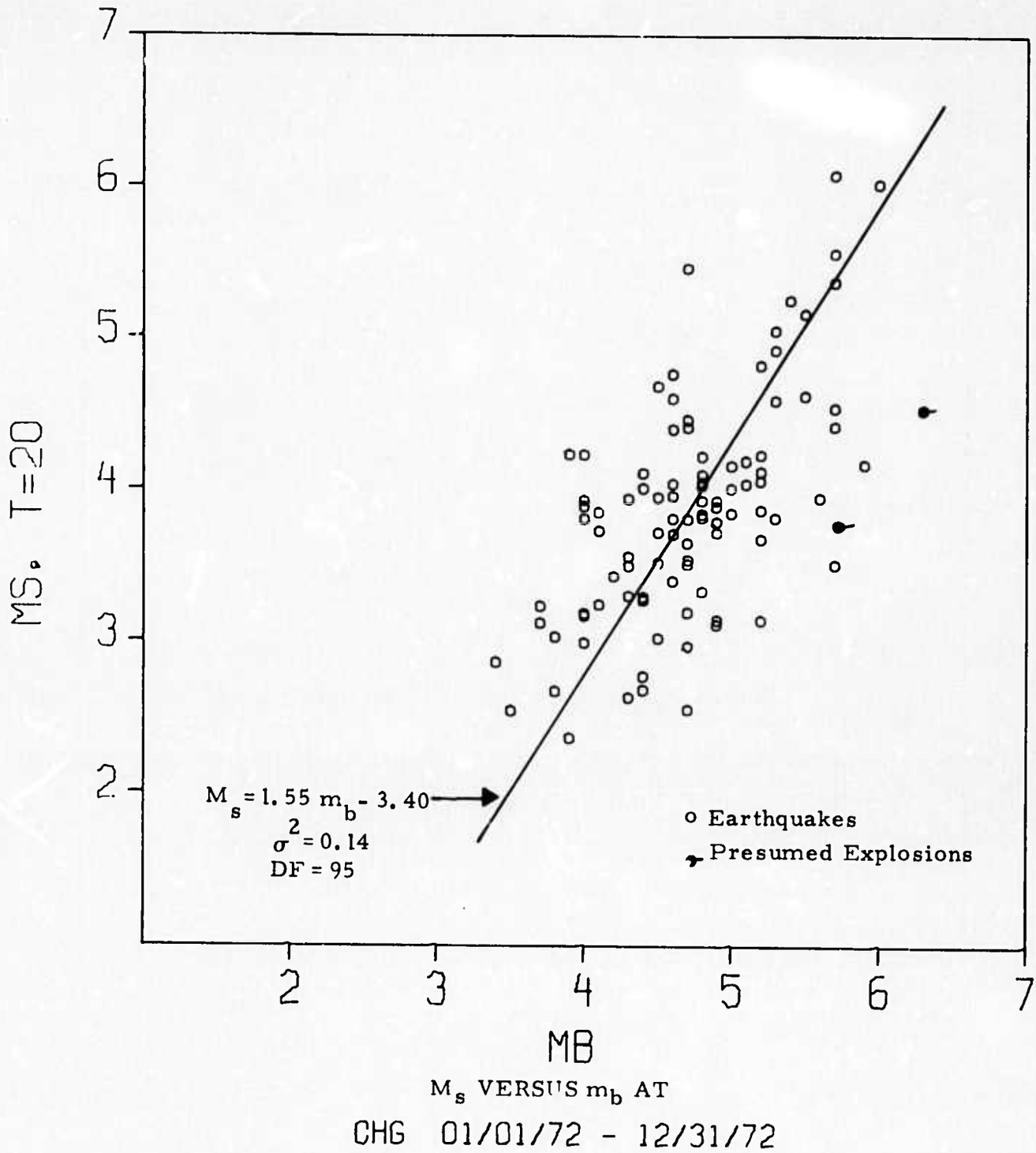
In determining the best linear fits to the data we have included all available data for each station. However, it is well known that event magnitudes are over estimated when they are near the detection threshold of any seismological station or network. Thus, the linear fits shown here should be considered as tentative estimations of the station response to Eurasian events. In addition to the above considerations, we have insufficient data available for stations ZLP and MAT (Figures V-10 and V-11).

In general, separation between earthquakes and presumed explosions is not distinct. However, Lambert and Becker (1973) showed that the variance (σ^2) for $M_s :: m_b$ data of events during January 1, 1972 through March 20, 1972 was significantly larger than for June 1, 1972 through July 31, 1972 data. They attributed this to erratic static gains and to the increase of noise for the winter months. Further, they found that many events located at about 30° N latitude and 50° E longitude are consistently misclassified.



M_s VERSUS m_b AT
CTA 06/01/72 - 12/31/72

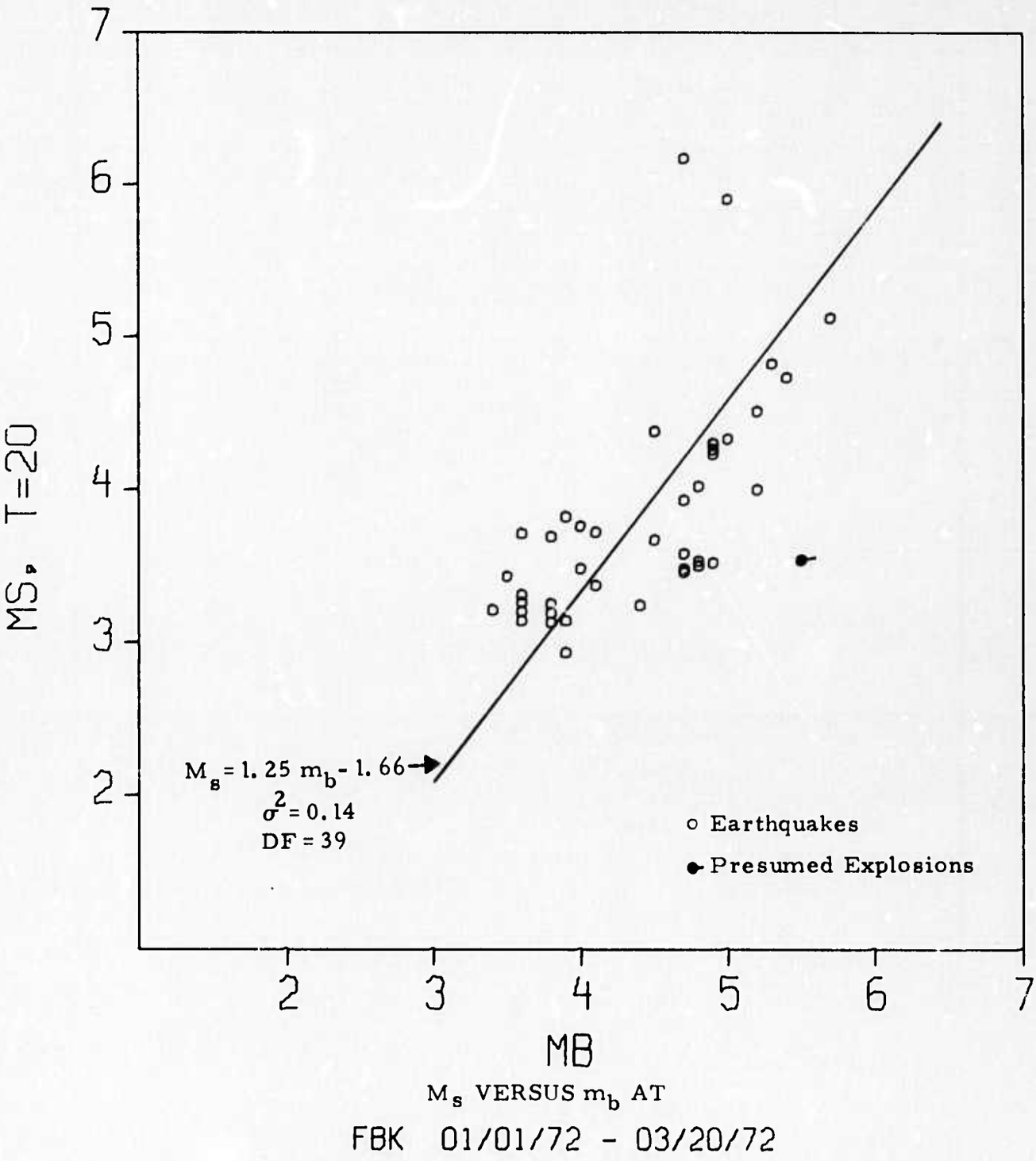
FIGURE V-1



M_s VERSUS m_b AT

CHG 01/01/72 - 12/31/72

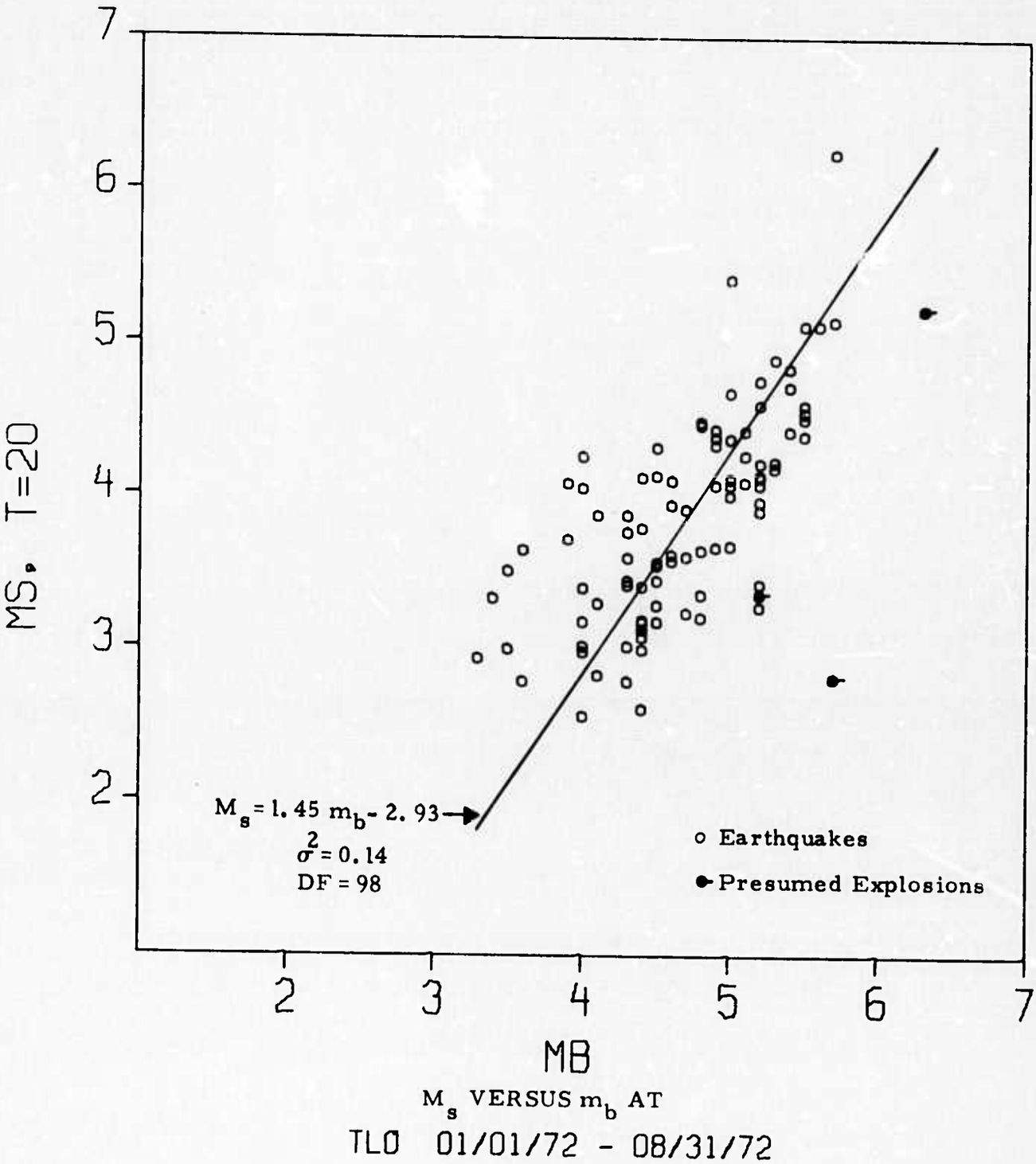
FIGURE V-2



M_s VERSUS m_b AT

FBK 01/01/72 - 03/20/72

FIGURE V-3



M_s VERSUS m_b AT

TLO 01/01/72 - 08/31/72

FIGURE V-4

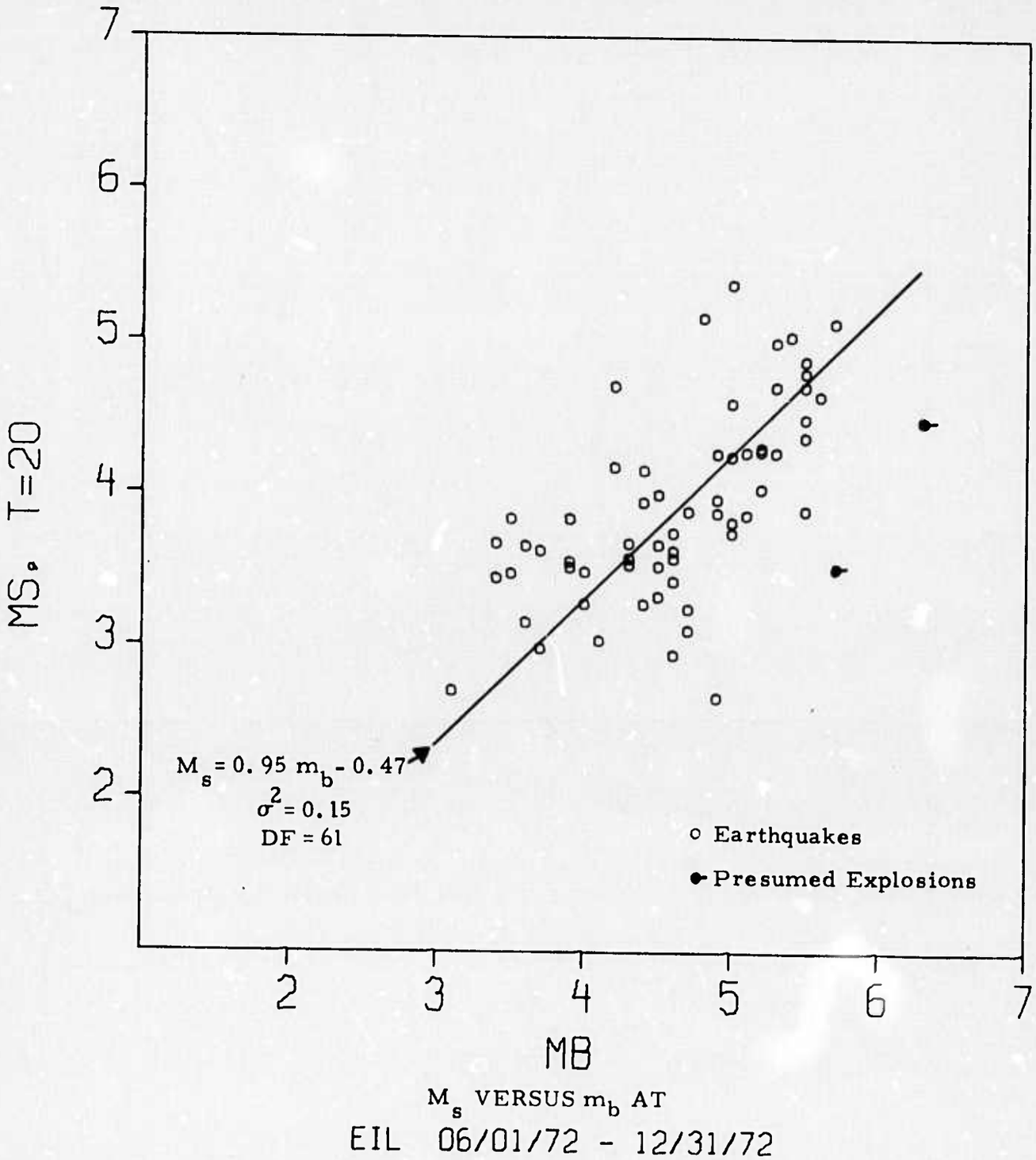

MS, T=20
MB
$M_s = 0.95\ m_b - 0.47$
$\sigma^2 = 0.15$
DF = 61
Earthquakes
Presumed Explosions
M_s VERSUS m_b AT
EIL 06/01/72 - 12/31/72

FIGURE V-5

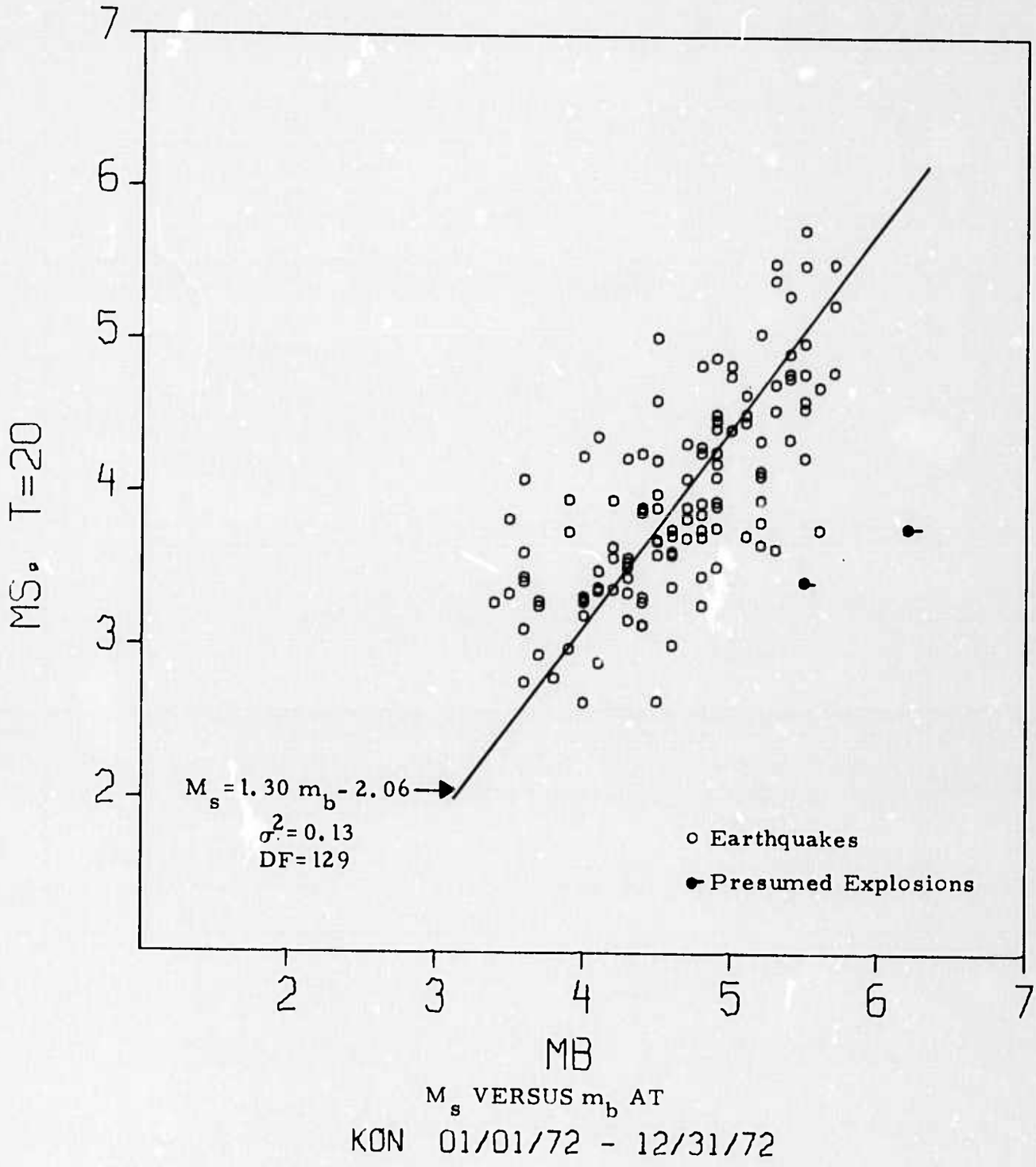
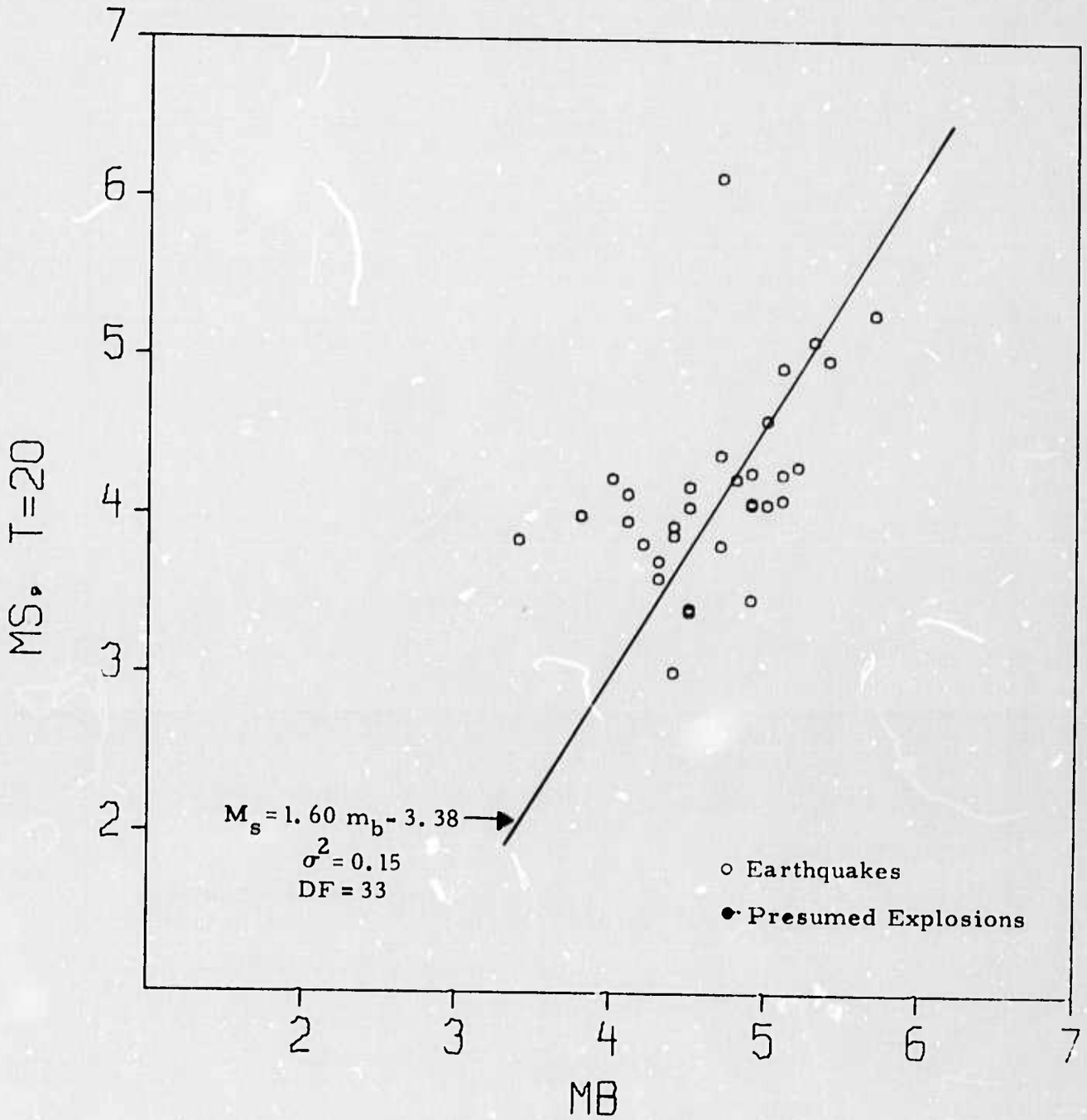

MS. T=20
MB
$M_s = 1.30\ m_b - 2.06$
$\sigma^2 = 0.13$
DF = 129
Earthquakes
Presumed Explosions
M_s VERSUS m_b AT
KON 01/01/72 - 12/31/72

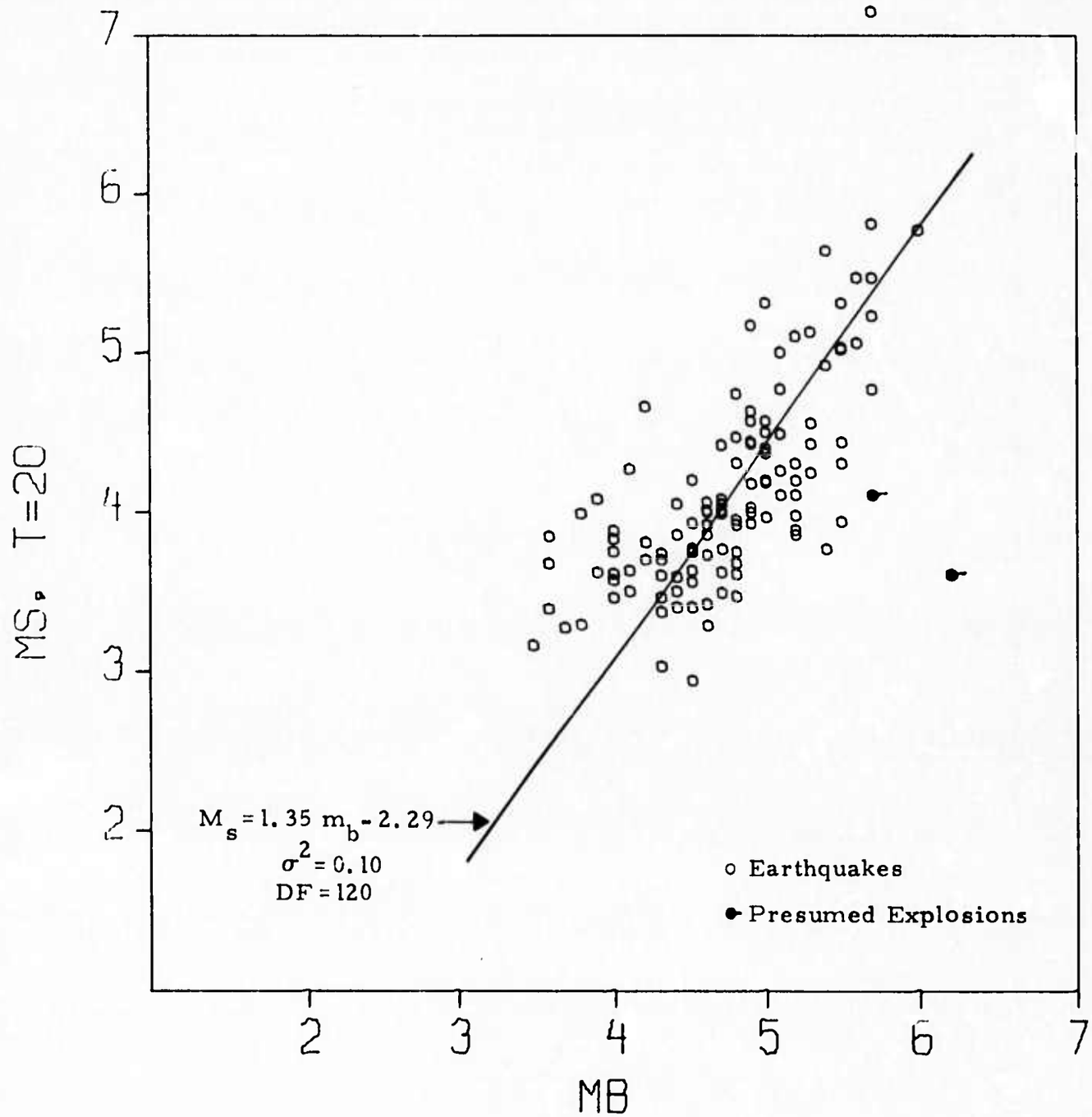
FIGURE V-6



M_s VERSUS m_b AT

OGD 01/01/72 - 08/31/72

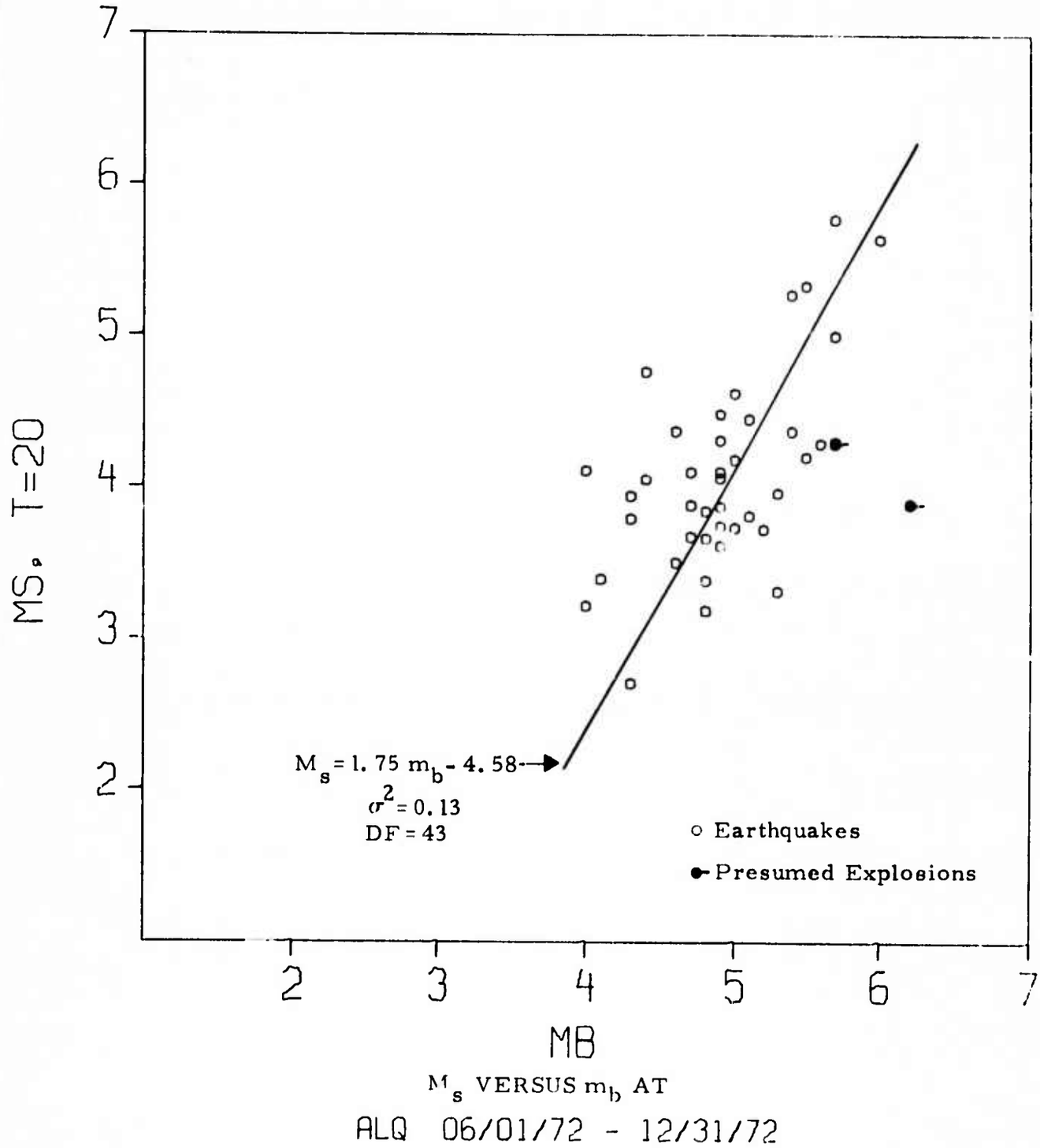
FIGURE V-7



M_s VERSUS m_b AT

KIP 06/01/72 - 12/31/72

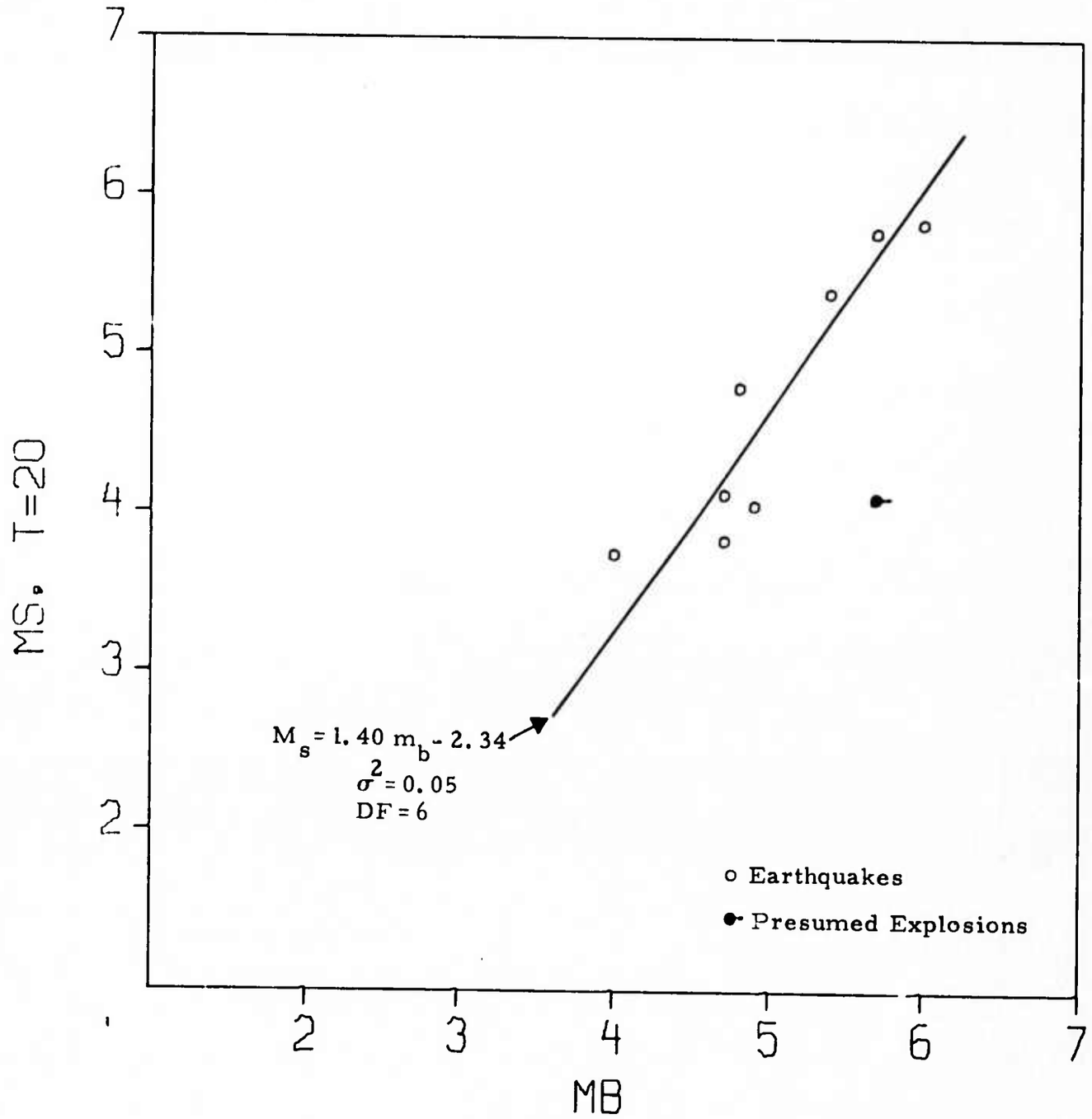
FIGURE V-8



M_s VERSUS m_b AT

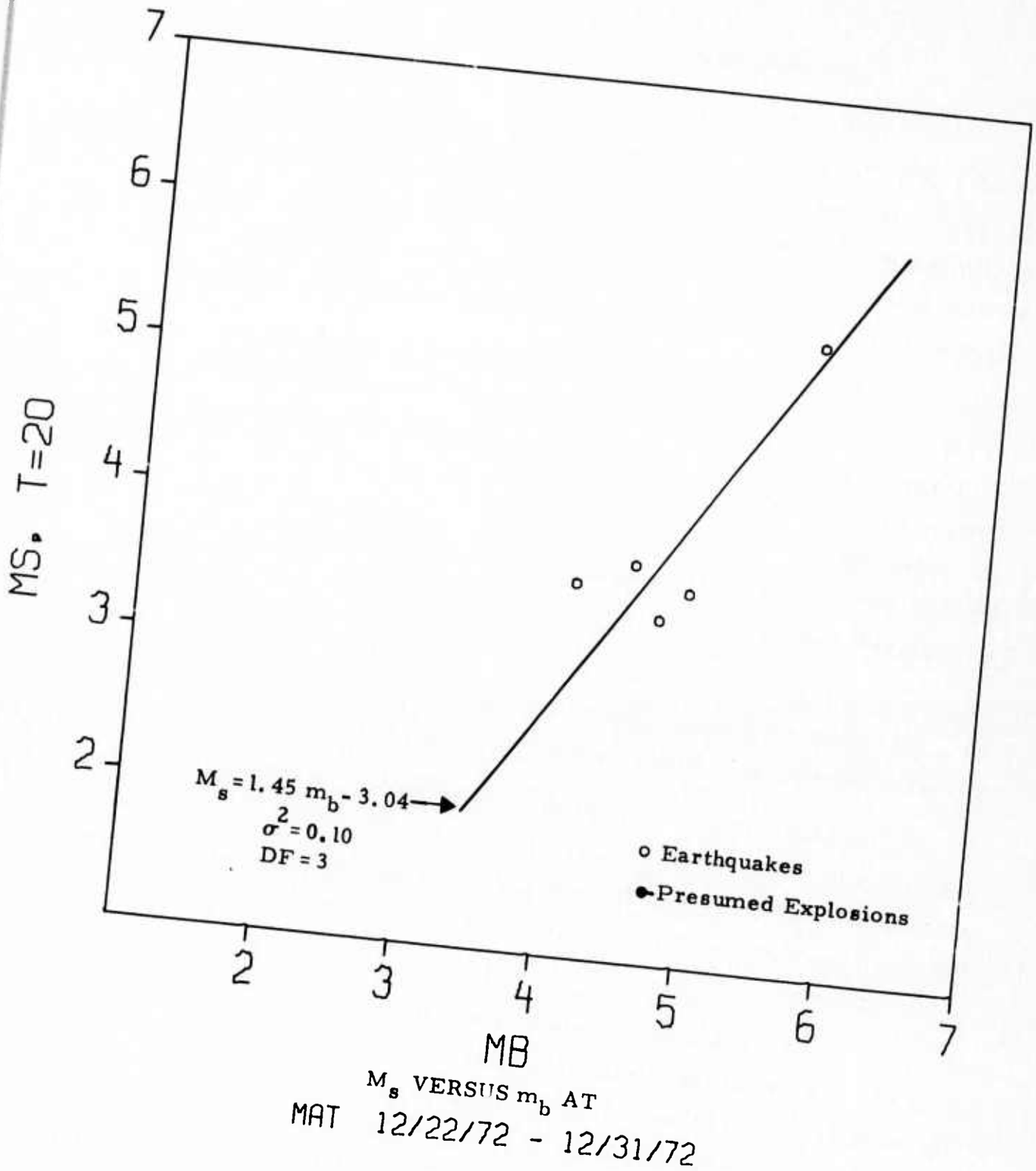
ALQ 06/01/72 - 12/31/72

FIGURE V-9



M_s VERSUS m_b AT
ZLP 12/01/72 - 12/31/72

FIGURE V-10



M_s VERSUS m_b AT
MAT 12/22/72 - 12/31/72

FIGURE V-11

2. VLPE Networks

One of the purposes of this study is to determine the capability of the VLPE network to distinguish between earthquakes and explosions. For this part of the study, we use the maximum amplitude of the Rayleigh wave for the magnitude determination. In most cases, the M_s determined at 20 seconds period is the largest value; however, in some instances M_s determined at 30 seconds period is either the largest or the only M_s reported.

Table V-1 lists the average M_s for each event, for the August 1, through December 31, 1972 ensemble of events. The Lambert and Becker (1973) report and Appendix V-B lists the average M_s for each event, for the January 1 through March 20, 1972 and June 1 through July 31, 1972 ensemble of events. Included with this M_s is the number of stations (n) taken in forming the average and the standard deviation (SD) where at least three stations provided useful signals.

Figure V-12 shows all events with their M_s value determined by one or more estimates. Fugure V-13 shows only those events with their M_s value determined by two or more estimates.

Considering the total data base, separation between earthquakes and presumed underground explosions is not distinct. Many of the same earthquakes that overlapped into the presumed explosion population at single stations remain as problems even with the M_s value determined by two or more estimates.

We determined the best linear fit to these earthquake data as described above for the single stations and in Appendix V-A. For both cases the slope is 1.00 and 1.05 and the intercept is -0.76 to -1.02 with the main mass of data contained within m_b of 3.7 to 5.3 ($3.7 \leq m_b \leq 5.3$). From section IV we found for the various networks the 50% detection threshold in terms of m_b was on the average 4.2. The theoretical source spectra, Tsai (1972),

TABLE V-1

VLPE NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
(PAGE 1 OF 6)

Event Number	m_b	VLPE		
		n	Average M_s	S. D.
549	3.7	1	3.27	
553	3.8	1	(2.71)	
554	4.5	3	(3.35)	0.31
555	3.4	1	3.44	
557	4.7	2	(3.92)	
558	5.1	5	4.92	0.46
559	5.0	5	5.03	0.46
560	4.2	1	(3.10)	
561	4.3	2	3.49	
562	4.5	2	(3.55)	
563	4.0	1	3.86	
564	3.9	1	3.51	
565	5.3	4	4.37	0.44
566	4.5	3	3.73	0.41
570	4.3	2	(3.43)	
571	4.0	1	3.01	
573	5.7	2	6.70	
578	4.7	1	3.77	
579	4.9	2	4.34	
582	4.5	3	(3.65)	0.53
583	5.5	2	(4.04)	
585	4.0	1	(2.91)	
586	5.0	1	3.81	
589	4.2	1	4.70	
591	4.5	2	3.78	
592	4.0	2	(2.69)	
594	4.7	2	3.95	
596	5.1	2	(3.94)	
598	5.5	3	(4.01)	0.45
600	4.5	1	(4.45)	

TABLE V-1

VLPE NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
(PAGE 2 OF 6)

Event Number	m_b	VLPE		
		n	Average M_s	S. D.
601	4.4	2	3.61	
605	5.1	3	4.26	0.00
606	4.8	3	4.52	0.62
608	4.5	1	4.31	
610	5.2	3	4.10	0.09
611	5.0	3	4.27	0.09
612	4.0	1	3.01	
614	5.3	3	4.53	0.52
617	4.4	2	(3.48)	
626	5.2	1	3.35	
627	3.5	2	3.23	
629	3.6	1	3.15	
630	4.3	2	(3.73)	
640	3.9	1	3.55	
641	4.0	1	3.83	
643	4.0	3	(3.63)	0.21
644	5.1	1	4.16	
645	5.1	1	(3.30)	
649	4.3	3	(3.63)	0.20
650	3.5	1	3.16	
651	4.9	3	(4.13)	0.18
652	5.7	2	(3.18)	
653	5.2	4	4.11	0.16
655	4.0	3	(3.49)	0.51
656	4.8	4	(3.32)	0.13
658	4.5	1	(3.39)	
659	4.0	1	2.55	
660	4.1	1	3.34	
661	5.2	4	(4.25)	0.32
664	3.7	1	(2.89)	

TABLE V-1

VLPE NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
(PAGE 3 OF 6)

Event Number	m_b	VLPE		
		n	Average M_s	S. D.
665	4.0	1	(2.68)	
671	3.6	1	3.68	
673	3.8	1	2.67	
676	4.8	1	4.47	
677	3.6	2	3.28	
678	4.2	3	(3.98)	0.79
679	6.3	3	4.74	0.41
680	5.2	1	4.12	
681	3.7	2	(3.07)	
682	3.7	2	(2.82)	
683	4.4	3	3.39	0.40
684	3.6	2	3.55	
685	3.7	1	3.12	
687	5.5	3	4.82	0.21
689	5.5	3	4.57	0.21
690	5.5	4	4.45	0.13
691	4.6	1	3.39	
692	4.3	1	3.35	
693	5.5	4	(4.45)	0.20
697	4.4	3	4.56	0.61
698	4.8	3	(3.81)	0.17
699	6.2	3	3.76	0.14
702	5.5	5	5.24	0.23
703	3.8	2	(2.72)	
704	5.2	3	4.69	0.49
708	4.5	2	3.83	
710	4.3	4	3.93	0.22
711	5.3	3	4.52	0.24
712	4.3	1	3.50	
713	4.5	2	4.12	

TABLE V-1

VLPE NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
(PAGE 4 OF 6)

Event Number	m_b	VLPE		
		n	Average M_s	S.D.
716	5.5	4	4.89	0.65
718	4.7	4	(3.94)	0.42
723	4.8	1	4.84	
725	3.9	1	(3.08)	
726	4.1	2	4.05	
728	4.5	1	2.64	
729	4.4	4	3.68	0.34
734	4.3	1	3.52	
735	4.0	1	(2.86)	
737	4.6	4	(3.50)	0.35
739	4.0	2	(3.05)	
741	4.8	2	(3.32)	
742	4.0	2	3.21	
743	4.0	2	3.78	
744	5.7	6	(5.36)	0.32
747	4.1	1	4.29	
748	4.0	2	3.41	
749	4.0	1	(3.16)	
750	4.9	1	3.72	
751	4.3	3	(3.64)	0.29
752	5.4	2	4.00	
755	5.2	1	3.52	
757	3.9	1	(3.26)	
758	5.1	3	4.23	0.27
760	5.6	2	3.86	
761	5.2	5	3.74	0.10
762	4.9	4	(4.07)	0.30
764	4.7	3	(3.64)	0.15
765	4.8	2	3.86	
771	4.4	1	3.29	

TABLE V-1

VLPE NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
(PAGE 5 OF 6)

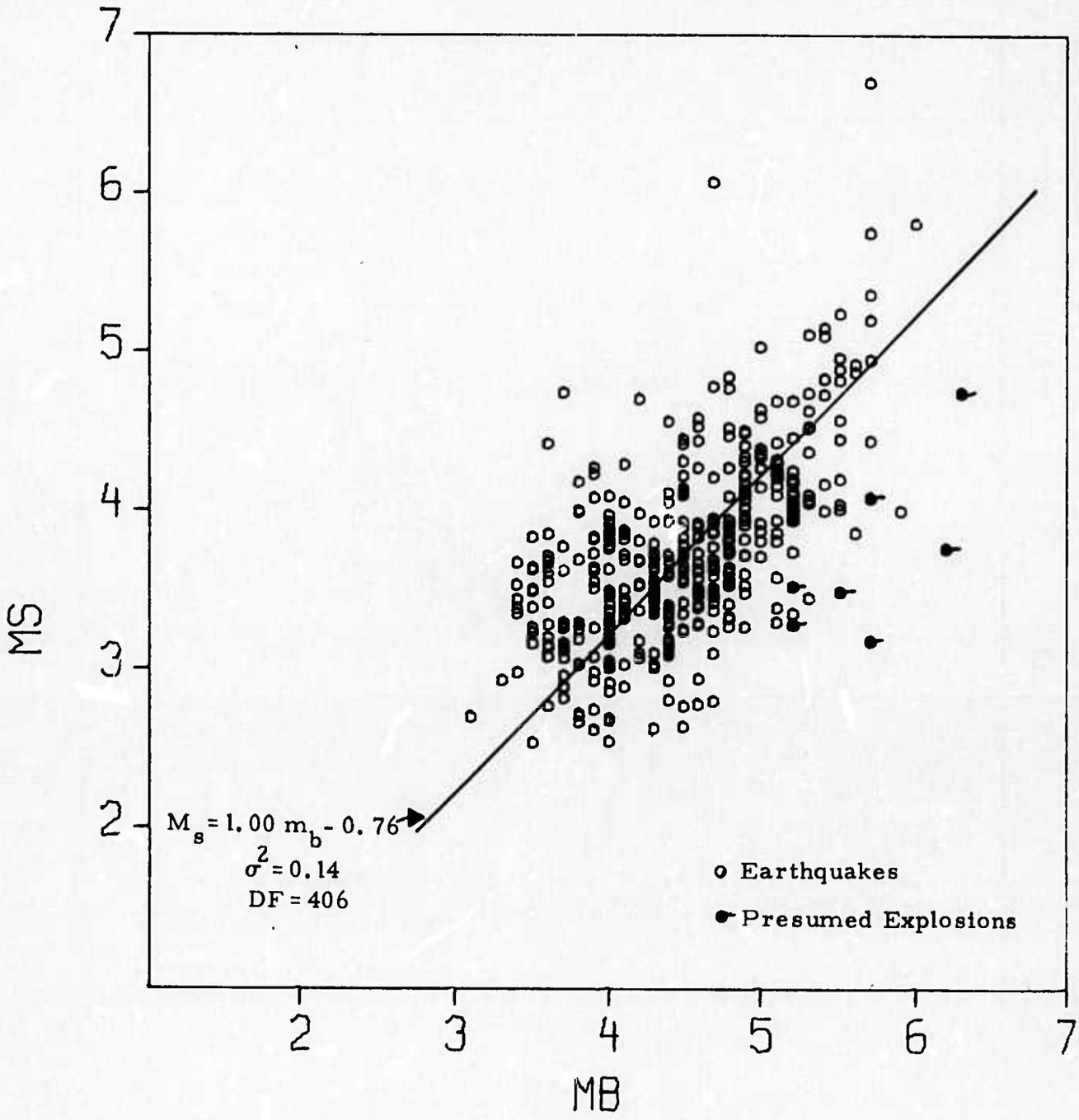
Event Number	m_b	VLPE		
		n	Average M_s	S.D.
773	3.9	1	2.98	
774	4.7	2	(2.80)	
775	5.4	5	5.15	0.18
776	4.8	4	3.73	0.24
778	5.1	4	(4.10)	0.29
781	5.0	3	(3.71)	0.27
783	4.4	1	3.59	
785	5.3	3	4.63	0.25
786	4.3	1	(3.03)	
787	3.7	1	(3.14)	
790	4.7	3	3.95	0.39
791	3.7	1	(3.16)	
797	5.7	4	4.08	0.19
799	6.0	4	5.81	0.16
802	4.8	2	4.77	
813	4.8	4	4.09	0.21
814	4.1	1	3.42	
818	5.7	4	4.44	0.22
821	4.6	1	3.29	
823	4.3	1	3.94	
825	4.7	5	4.21	0.23
826	4.7	1	(3.51)	
827	4.4	1	4.05	
828	5.7	5	5.75	0.27
836	4.6	2	3.57	
837	4.9	5	3.72	0.35
839	4.0	4	3.81	0.23
840	3.8	1	3.99	
842	4.7	4	(3.87)	0.16
844	4.6	5	4.27	0.16

TABLE V-1

VLPE NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
(PAGE 6 OF 6)

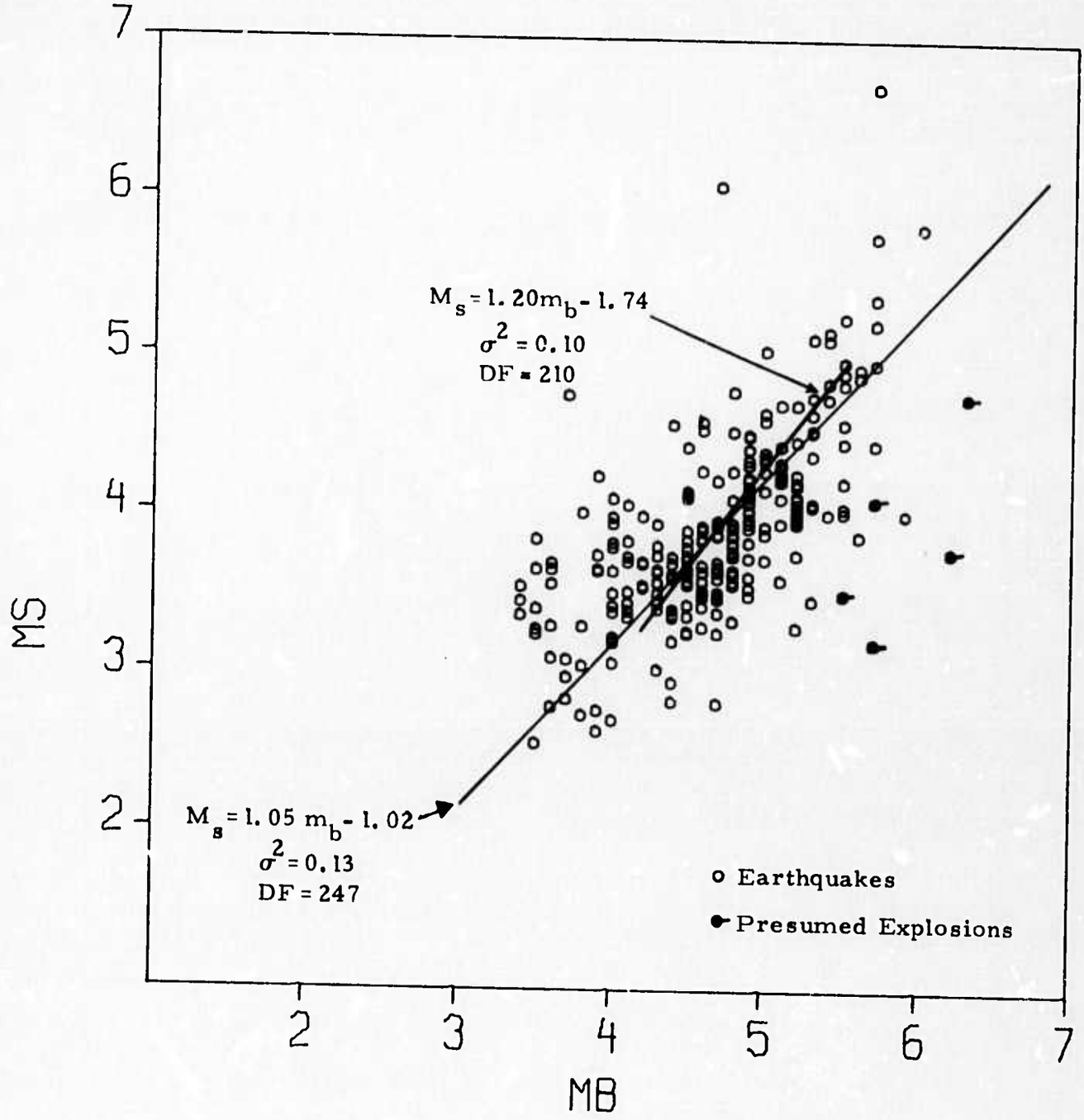
Event Number	m_b	VLPE		
		n	Average M_s	S.D.
848	4.2	1	3.07	
852	4.1	1	(3.44)	
856	3.7	2	2.96	
857	4.8	3	3.62	0.28
858	4.7	4	3.66	0.33
859	5.7	7	5.20	0.12
860	3.5	1	3.63	
862	4.6	1	2.94	
863	3.6	1	3.61	
867	4.1	3	3.43	0.10
868	4.3	1	3.53	
870	4.1	2	3.69	
873	4.5	2	3.62	
874	4.4	1	3.27	
875	4.9	4	4.22	0.55

( ) Averages with M_s, T= 30.0 seconds



ONE OR MORE STATIONS
MS VERSUS MB

FIGURE V-12



TWO OR MORE STATIONS
MS VERSUS MB

FIGURE V-13

shows that for m_b between 4.2 and 5.5 we should expect a linear slope. We considered all M_s data for $4.2 \leq m_b \leq 5.5$ where M_s was determined by two or more estimates and obtained $M_s = 1.20\ m_b - 1.74$, $\sigma^2 = 0.10$, with 210 degrees of freedom (Figure V-13). This agrees well with that predicted from the theoretical source spectra and further, the slope is equal to that observed at ALPA where Strauss (1973) reports $M_s = 1.20\ m_b - 2.20$ for the same m_b increment.

3. Summary

Utilizing all the data analyzed for the year 1972 we find that it is not possible to discriminate completely between presumed explosions and earthquakes located in Eurasia. However, Lambert and Becker (1973) show for a subset of data from June 1 through July 31, 1972 where M_s is determined from two or more values there is complete separation of the two populations. Clearly, we need to study regional and temporal subsets of the data, and various networks of VLPE sites to define the problems of discriminating with M_s and m_b.

Single station general linear trends of $M_s - m_b$ are determined without consideration of errors introduced to low magnitude estimates due to noise. Further, we need more data at many of the stations and the bias caused by noise for small events must be considered, to ascertain the true station response to events from Eurasia.

C. LOVE TO RAYLEIGH WAVE AMPLITUDE RATIOS (LQ/LR)

A potential measure of detection and discrimination capability for the VLPE is the LQ/LR ratio. Various authors have reported larger shear-to-compressional amplitudes for earthquakes than for underground nuclear explosions.

Strauss (1973) reports a mean LQ/LR ratio of 1.16 at ALPA with nearly equal detection rates for LQ and LR. Similarly, Laun et al (1973)

reports a value of 1.35 for NORSAR with the LQ and LR detection rates again nearly equal.

Figure V-14 shows the distribution of LQ/LR ratios for earthquakes recorded by VLPE stations. We obtain a mean value of 1.18 for this ratio. No LQ/LR ratios were obtained at EIL for either the January 1 through March 20, 1972 or June 1 through August 31, 1972 event ensembles. Further, the ratios determined at OGD for June 1 through August 31, 1972 event ensemble were not included due to erratic gains encountered on the horizontal components. Individual station and event LQ/LR ratios are tabulated in Appendixes II-B through II-L. The average LQ/LR value of 1.18 may be biased due to problems associated with the horizontal instruments and due to the fact that the detection rate for Love waves could not be determined. However, the mean LQ/LR ratio of 1.18 observed by the VLPE network is consistent with those independently determined at ALPA and NORSAR.

Table V-2 presents the arithmetic means and the variances of the log (LQ/LR) values plus the antilogs of the mean as a function of region. The locations of the regions studied are shown in Figure V-15. Two regions have LQ/LR ratios of less than one, East Kazakh and the Kurile Island region. The three ratios from East Kazakh are from two large presumed explosions (event numbers 699 and 797).

Von Seggern (1972) gives the distribution for 412 LQ/LR ratios for underground explosions from the Nevada Test Site (NTS) and the Amchitka test site. Most of the ratios were obtained from the NTS and a few from Amchitka. We determined the mean of these values to be about 0.60. This compares favorably with the East Kazakh presumed explosion value of 0.72. Further, this value of 0.72 is probably high due to the almost total lack of Love wave amplitude measurements for any of the presumed explosions as measured at the various VLPE sites.

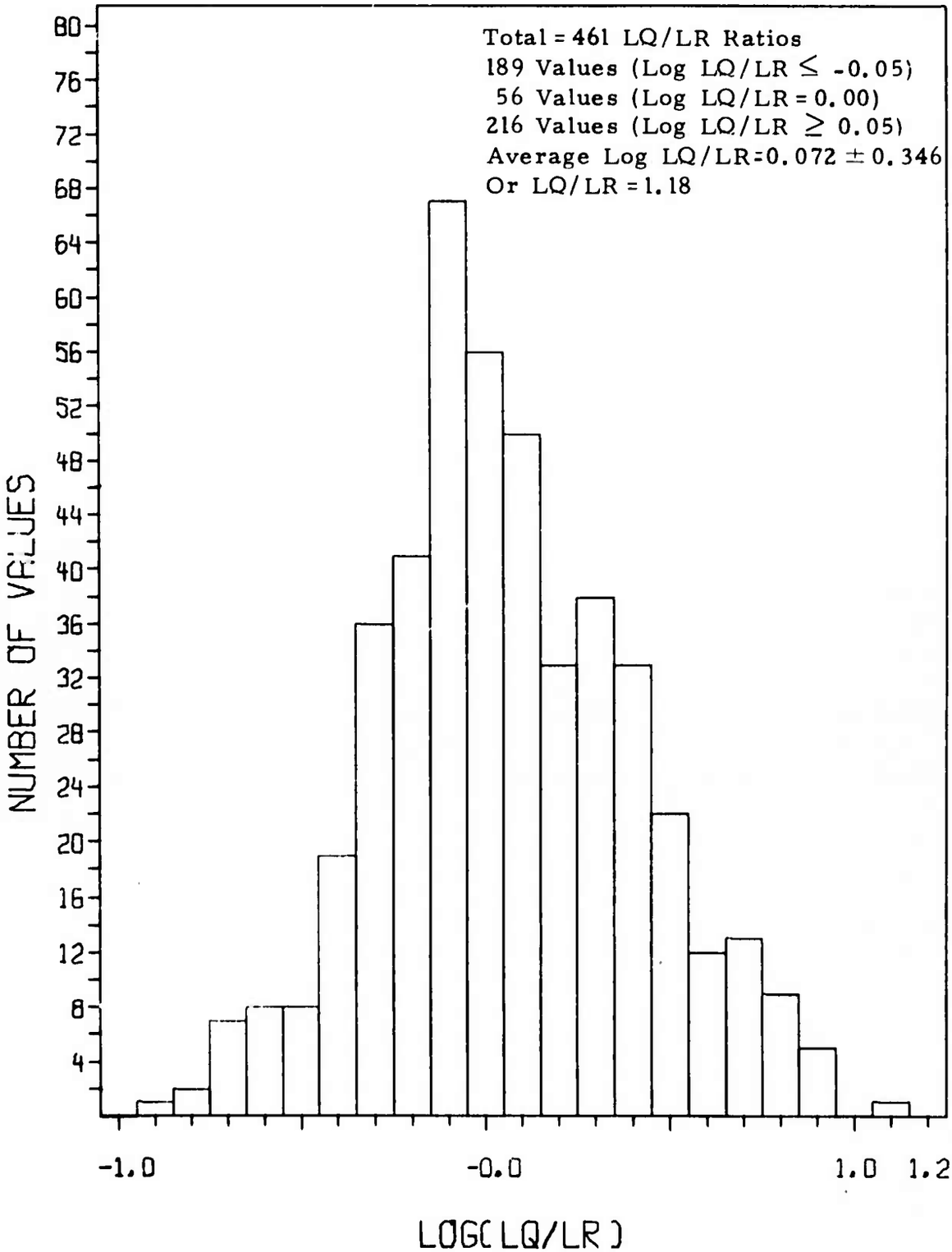


FIGURE V-14

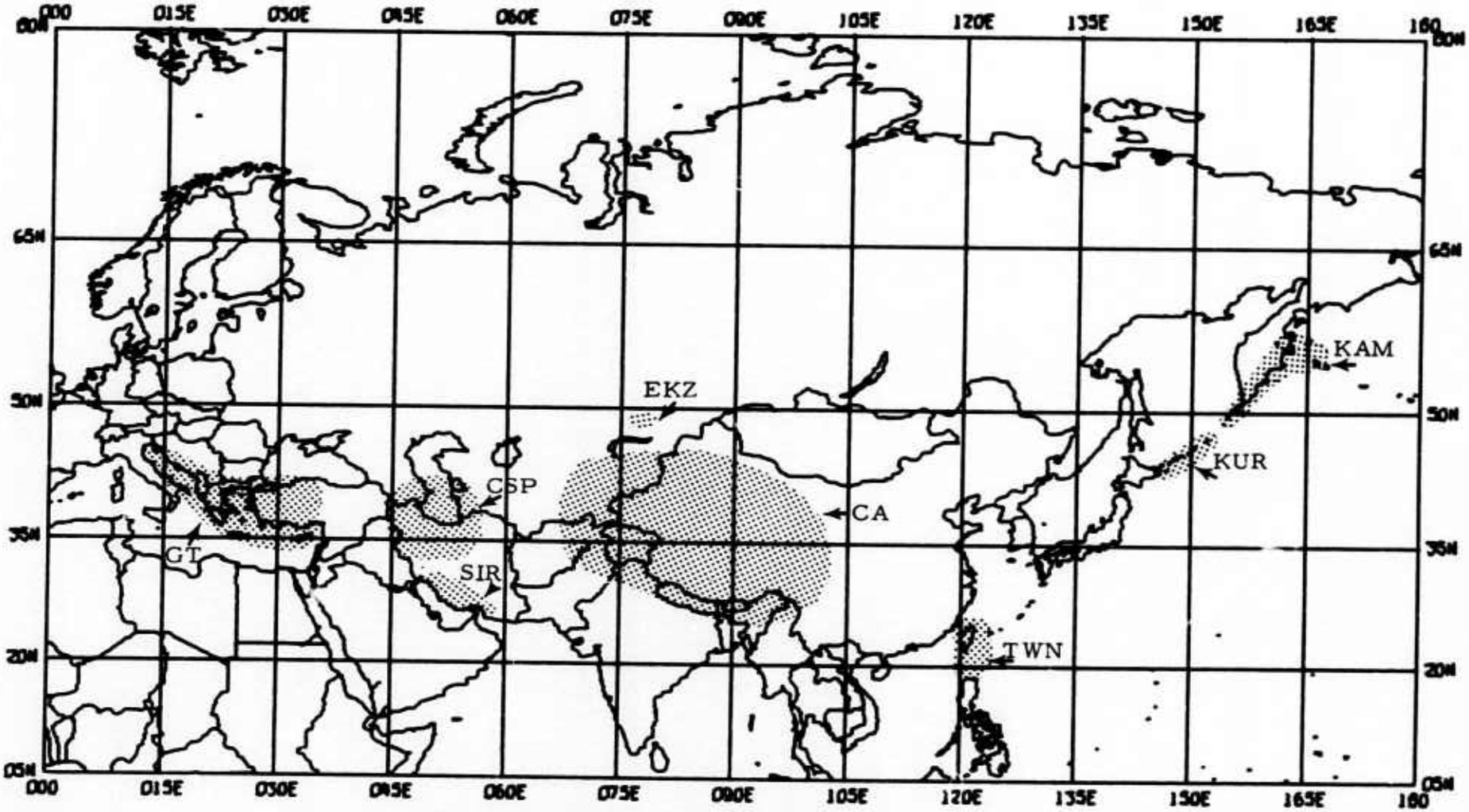
LOVE TO RAYLEIGH WAVE AMPLITUDE RATIOS

OF EURASIAN EVENTS SEEN BY VLPE STATIONS

TABLE V-2

TABLE OF ARITHMETIC MEANS OF LOG (LQ/LR) VALUES AND THEIR RESPECTIVE VARIANCES AND ANTILOGS (AS A FUNCTION OF REGION)

Region	Arithemetic Mean of Log(LQ/LR)	σ^2 of Mean of Log(LQ/LR)	Antilog of Mean
Central Asia	0.04(N=64)	0.12	1.10
Caspian Sea	0.12(N=15)	0.08	1.32
East Kazakh	-0.14(N=3)	0.11	0.72
Greece-Turkey	0.15(N=81)	0.15	1.42
Kamchatka	0.02(N=79)	0.12	1.04
Kurile Is.	-0.04(N=59)	0.11	0.91
Southern Iran	0.15(N=25)	0.13	1.41
Taiwan	0.08(N=53)	0.10	1.21
No Specific Region	0.06(N=82)	0.11	1.14



MILLER MODIFIED MERCATOR PROJECTION
MAP SCALE: 0.750 IN./ 15 DEG. LONGITUDE

FIGURE V-15

LOCATION OF THE SEISMIC REGIONS

Table V-3 shows the arithmetic means of the LQ/LR ratios as a function of region and station. The index "Station Code" refers to the VLPE stations in the following order: 1(CTA), 2(CHG), 3(FBK), 4(TLO), 5(EIL), 6(KON), 7(OGD), 8(KIP), 9(ALQ), 10(ZLP) and 11(MAT). Variances for these values have not been included since the number of LQ/LR values for each station per region is quite small (average N=6). In addition, the table presents the azimuths computed from the approximate region centers to each station as defined by Strauss (1973) and shown in Figure V-15.

There does not seem to be any correlation between these azimuths and the LQ/LR values. That is, for a given station the mean LQ/LR with the same approximate azimuths appear unrelated. Similarly, for a given region the mean ratios of different stations with similar azimuths vary significantly. This suggests that earthquake source parameters vary significantly within a given region; however, we have insufficient data to reach any definite conclusion.

D. SURFACE WAVE RADIATION PATTERNS

Amplitude and phase radiation patterns of seismic energy from the source have been utilized very little in discrimination. One major difficulty is that the influence of path and recording site on amplitudes must be minimized.

Attempts to determine radiation patterns for presumed East Kazakh explosions and earthquakes near the presumed explosions utilizing the distance function in the M_s formula were unsuccessful. This was primarily due to the paucity of LR or LQ data at many azimuths and the fact that the distance function in the M_s formula essentially accounts only for the average effective attenuation over all stations.

Toksoz et al (1964) minimizes path and site effects by ratioing Love and Rayleigh wave amplitudes; however, as shown above in the discussion

TABLE V-3

TABLE OF ARITHMETIC MEANS OF LQ/LR RATIOS
(AS A FUNCTION OF REGION & STATION)

Regions

Station Code	Central Asia	AZ	Caspian Sea	AZ	East Kazakh	AZ	Greece Turkey	AZ
1	1.13 N=4*	124	- N=0	103	- N=0	121	1.19 N=3	88
2	1.82 N=5	146	2.44 N=1	100	0.83 N=1	147	1.69 N=13	84
3	0.93 N=11	22	- N=0	8	- N=0	21	1.29 N=6	357
4	1.10 N=5	302	2.27 N=5	290	- N=0	295	2.53 N=14	284
5	1.87 N=6	272	0.89 N=2	240	- N=0	258	- N=0	133
6	1.88 N=24	320	0.82 N=3	323	- N=0	312	2.24 N=30	340
7	0.53 N=3	345	0.72 N=1	321	- N=0	341	0.67 N=9	309
8	2.12 N=6	56	1.57 N=3	29	0.52 N=1	52	- N=0	3
9	- N=0	10	- N=0	340	0.86 N=1	5	4.94 N=5	322
10	- N=0	307	- N=0	274	- N=0	310	1.58 N=1	259
11	- N=0	77	- N= 0	61	- N=0	84	- N=0	48

*N=Total number of LQ/LR ratios considered

TABLE V-3

TABLE OF ARITHMETIC MEANS OF LQ/LR RATIOS
(Continued)

Regions

Station Code	Kamchatka	AZ	Kurile Is.	AZ	Southern Iran	AZ	Taiwan	AZ	No Region	AZ
1	1.69 N=6	196	2.24 N=5	122	1.84 N=4	106	1.22 N=5	149	1.48 N=5	?
2	2.01 N=9	260	0.84 N=9	253	1.73 N=4	93	1.59 N=13	266	2.22 N=12	?
3	1.50 N=12	46	1.41 N=8	37	1.99 N=2	9	1.26 N=4	27	1.09 N=11	?
4	1.45 N=11	350	3.34 N=1	339	0.86 N=2	299	1.38 N=8	321	1.72 N=14	?
5	0.36 N=2	317	0.87 N=2	306	- N=0	276	- N=0	297	0.72 N=4	?
6	1.31 N=16	345	0.97 N=9	339	2.99 N=7	329	2.14 N=10	332	1.08 N=18	?
7	1.50 N=4	42	0.29 N=3	31	- N=0	323	1.19 N=4	14	0.81 N=3	?
8	1.23 N=15	122	1.40 N=12	100	1.40 N=4	34	0.91 N=5	73	2.29 N=11	?
9	1.62 N=3	67	1.21 N=5	55	1.97 N=1	342	2.76 N=4	40	0.77 N=3	?
10	0.59 N=1	67	0.65 N=4	301	0.80 N=1	269	- N=0	62	1.60 N=1	?
11	.. N=0	134	0.72 N=1	164	- N=0	59	- N=0	41	- N=0	?

of LQ/LR ratios only three such values were available from two presumed explosions from East Kazakh.

Turnbull and Sun (1973) determined the source parameters and resultant radiation patterns for two Central Italy events (numbers 97 and 105) with the use of VLPE LR and LQ spectra. These results compare favorably with body wave solutions of appropriate Italian events described by McKenzie (1972).

Figures V-16 and V-17 present the theoretical LQ/LR radiation patterns as determined by Turnbull and Sun (1973). The solid dots are the observed LQ/LR amplitude ratios. The observed ratios do compare well with the theoretical patterns, but they also demonstrate the need for more data at more azimuths to determine source parameters.

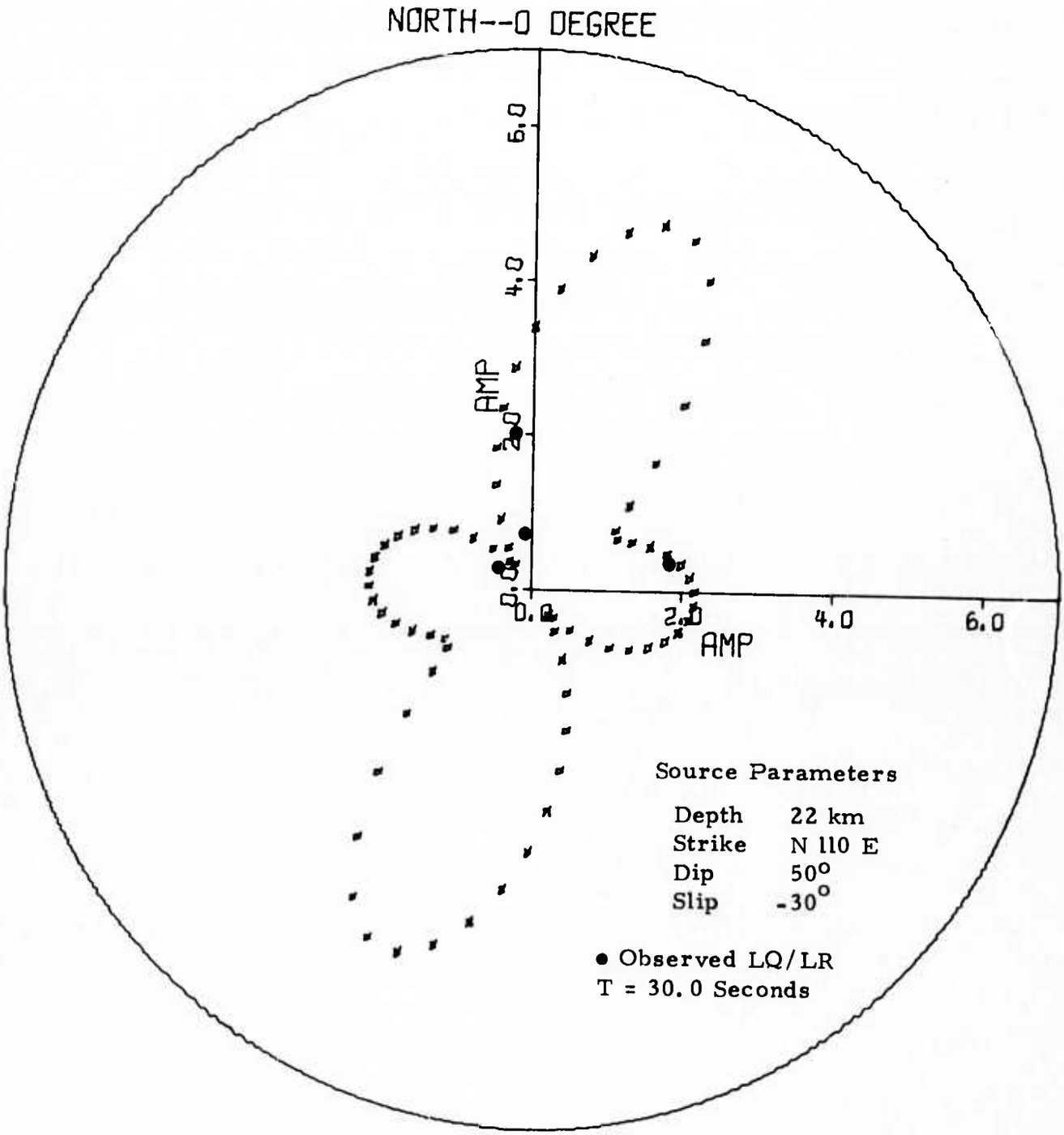


FIGURE V-16

THEORETICAL AND OBSERVED LQ/LR RADIATION PATTERN FOR EVENT 97

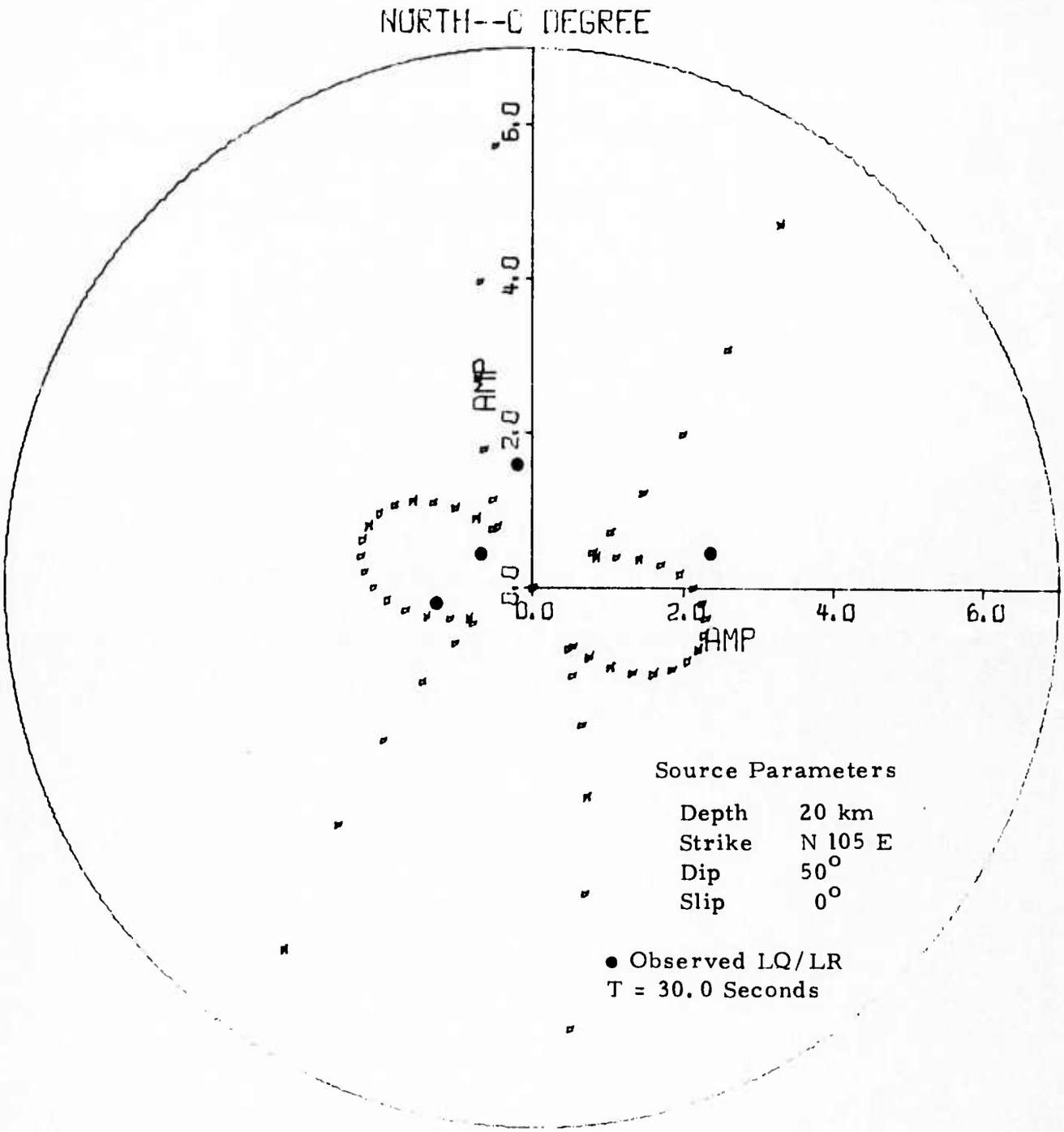


FIGURE V-17

THEORETICAL AND OBSERVED LQ/LR RADIATION PATTERN FOR EVENT 105

SECTION VI

SUMMARY AND CONCLUSIONS

A. NOISE SUMMARY

Data from vertical and simultaneous component noise samples from VLPE sites show the following:

- The presence of a "stable noise minimum" is evident in the approximate range of 22-35 seconds.
- At most VLPE sites a microseismic peak is present in the 17-20 second period range.
- There is a leveling off of the vertical and horizontal noise field at periods below the microseismic peak while at periods above 30-35 seconds great variability in the horizontal noise field relative to the vertical noise field.
- Seasonal variations in the vertical noise fields are suggested by the slowly changing long term nature of the vertical noise fields.
- Intercomponent frequency dependent cross-correlation of the RMS amplitudes is rarely observed but when present, it occurs only at the same periods on both correlated components. Despite this occasional correlation, we interpret this to mean that in general noise on one component is independent of noise on the other two.

A larger more continuous data base is required to ascertain whether seasonal variations in the noise field occur at the VLPE sites. We have insufficient noise data for stations EIL, ZLP, and MAT for all aspects of noise analysis.

B. SUMMARY OF VLPE DETECTION CAPABILITY

- The single station detectability estimates for m_b and M_s are listed in Table IV-1.
- Separate estimates were computed for all events within 50 degrees epicentral distance. It is seen that the difference in 50 percent detectability for these two subsets ranges from 0.2 to 0.5 m_b units.
- The best stations are CHG and KON (m_b of 4.35 and 4.38) and the average m_b for all stations is 4.56.
- The three networks requiring one operational station are almost equivalent in terms of the 50 percent m_b threshold (mb≃4.2). The same three networks requiring two operational stations also are about equivalent in terms of the 50 percent m_b threshold ($m_b \simeq 4.5$). The network detectability estimates for m_b and M_s are listed in Table IV-2.
- M_s threshold values listed in Tables IV-1 and IV-2 are subject to significant uncertainties, and it is expected that more reliable estimates may be obtained in our future studies when direct detection statistics based on M_s values become available.
- The probability of mixed events occurring at VLPE networks are displayed in Table IV-3. These probabilities are valid only for the present VLPE capability.
- Based on 844 events with at least one operational station we classified 22 percent of the events as mixed events.
- The actual number of events that remained as mixed events for the total network was 49 and the average number of operational

stations was 3.8. This results in 5.8 percent mixed events remaining.

- Matched filters (reference waveform and chirp) yielded an average of 3.6 dB SNNR improvement when applied to Rayleigh waves.

- Application of matched filters increases the number of detections by a factor of two. However, the small data base used precludes the determination of accurate detection thresholds.

- Preliminary evaluation of the Three Component Adaptive processor yielded detection results comparable to those for the chirp filter.

C. SUMMARY OF VLPE DISCRIMINATION CAPABILITY

- M_s versus m_b separation between earthquakes and presumed explosions is not distinct at single VLPE stations or the total VLPE network. We need to study regional and temporal subsets of the data and various networks of VLPE sites to define the problems of discriminating with M_s and m_b.

- Single station and the total-network linear trends of M_s versus m_b are determined. However, the effect of noise on low magnitude estimates must be considered and trends must be segmented or fitted with a higher order polynomial to ascertain the true station and network response to events from Eurasia.

- We obtained a mean of 1.18 for the Love to Rayleigh wave amplitude ratio for Eurasian earthquakes, and for two presumed explosions from East Kazakh, three ratios gave an average LQ/LR of 0.72.

- A mean LQ/LR of about 0.60 was determined for 412 ratios reported by Von Seggern for explosions from mostly the NTS and a few from Amchitka. This compares favorably with the East Kazakh

value of 0.72 especially since this value is probably high due to the almost total lack of Love wave amplitude measurements for any of the presumed explosions.

- No correlation of LQ/LR ratios between regions and stations having the same azimuths was observed. This suggests that either the earthquake source parameters vary significantly within the defined regions and/or reflects the poor quality of data available from the VLPE horizontal components.
- Attempts to determine radiation patterns for presumed East Kazakh explosions and earthquakes near the presumed explosions were unsuccessful due to the lack of LR or LQ data at many azimuths.

For future studies, we can make the following recommendations:

- A larger more continuous data base is required to ascertain whether seasonal variations in the noise field occur at the VLPE sites. Acquire more data for stations EIL, ZLP, and MAT to complete the noise analysis at these sites.
- Determine the detection thresholds of VLPE stations and networks in terms of M_s based on direct detection statistics when sufficient M_s data becomes available.
- Enlarge the data base for application of matched filters and Three Component Adaptive processor to define the capabilities of these techniques.
- Determine the true M_s versus m_b response of single station and network for Eurasian events.

SECTION VII
ACKNOWLEDGMENTS

We wish to thank T. W. Harley and L. S. Turnbull for their many helpful discussions and critical reading of this paper. We especially wish to acknowledge F. Ringdal, A. I. Tolstoy and L. S. Turnbull for their assistance with the theory and programs used in the determination of the maximum likelihood detection threshold estimates and the linear M_s versus m_b trends. We are also grateful to E. S. Becker and A. I. Tolstoy for their capable assistance in processing, analysis, and reduction of the data.

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APPENDIX II-A

EVENT LIST

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0001	01/01	15.04.19	59.7	154.8	4.1	L	E SIBERIA
0002	01/01	16.55.06	50.7	155.8	4.6	L	KURIL IS
0003	01/01	18.13.54	49.4	156.5	4.0	L	KURIL IS
0004	01/02	05.37.25	46.1	146.2	4.0	L	N W OF KURIL IS
0005	01/02	09.17.53	37.9	20.7	4.2	P	IONIAN SEA
0006	01/02	10.27.35	41.8	84.5	5.2	P	S SINKIANG PROV.
0007	01/03	06.36.38	51.6	159.4	4.8	P	OFF E COAST KAMCHATKA
0008	01/03	19.26.42	52.0	159.0	4.5	N	NEAR E COAST KAMCHATKA
0009	01/03	23.40.37	58.8	130.9	3.4	L	E RUSSIA
0010	01/04	02.29.18	55.6	161.2	4.2	L	NEAR E COAST KAMCHATKA
0011	01/04	05.08.48	22.4	122.0	4.8	P	TAIWAN REGION
0012	01/04	10.42.31	55.6	163.8	4.4	L	OFF E COAST KAMCHATKA
0013	01/04	12.15.17	22.4	122.2	4.8	P	TAIWAN
0014	01/04	12.16.39	37.4	129.2	3.9	I	S KOREA
0015	01/04	13.13.01	60.0	101.7	3.8	L	CENTRAL RUSSIA
0016	01/05	02.16.10	43.8	147.2	4.5	P	KURIL IS
0017	01/05	04.57.41	47.8	16.2	4.0	P	AUSTRIA
0018	01/05	12.02.54	37.8	73.1	4.5	L	TADZHIK SSR
0019	01/05	14.26.48	56.6	165.4	4.0	L	KOMANDORSKY IS
0020	01/05	16.09.50	57.3	160.5	3.9	L	KAMCHATKA
0021	01/06	06.30.35	40.7	72.4	4.7	P	KIRGIZ SSR
0022	01/06	06.33.34	23.2	123.4	4.7	P	TAIWAN
0023	01/06	09.41.33	30.2	50.5	5.2	P	IRAN
0024	01/07	08.04.05	37.0	72.0	3.9	N	AFGHANISTAN USSR BORDER
0025	01/07	20.37.32	44.1	45.1	4.2	L	SW RUSSIA
0026	01/08	05.35.42	22.0	119.0	4.7	N	TAIWAN REGION
0027	01/08	14.32.27	23.0	119.0	4.6	N	TAIWAN REGION
0028	01/09	03.23.06	54.4	164.4	3.6	L	KOMANDORSKY
0029	01/09	14.00.59	55.7	163.6	4.3	L	OFF E COAST KAMCHATKA
0030	01/09	14.47.46	45.1	148.4	3.8	L	KURIL IS
0031	01/10	05.23.53	20.9	120.4	5.0	P	PHILIPINE ISLANDS
0032	01/10	13.56.55	55.7	163.7	4.4	P	OFF E COAST KAMCHATKA
0033	01/11	08.54.34	54.7	168.2	3.9	L	KOMANDORSKY
0034	01/11	15.46.45	43.4	147.8	4.0	L	KURIL IS
0035	01/12	06.36.28	37.7	30.0	4.4	L	TURKEY
0036	01/12	13.51.20	35.0	23.5	4.9	P	CRETE
0037	01/12	20.20.15	55.6	163.9	4.9	P	OFF E COAST KAMCHATKA
0038	01/12	20.27.39	55.5	163.6	4.0	L	OFF E COAST KAMCHATKA
0039	01/13	17.24.07	61.9	147.1	5.3	P	E SIBERIA
0040	01/14	03.20.20	67.5	171.5	3.9	P	CHUKCHI SEA
0041	01/14	22.10.04	32.9	46.9	5.1	P	IRAN-IRAQ BORDER REGION
0042	01/15	00.58.33	49.6	155.0	3.9	I	KURIL IS
0043	01/15	19.07.58	57.4	120.7	4.7	P	E RUSSIA
0044	01/15	20.21.50	40.3	79.0	5.4	P	S. SINKIANG PROVINCE
0045	01/15	20.45.22	39.3	79.9	4.6	L	S SINKIANG PROV
0046	01/16	04.38.16	55.6	163.5	3.9	L	NEAR E COAST KAMCHATKA
0047	01/16	11.00.49	55.6	163.2	3.9	L	OFF E COAST KAMCHATKA
0048	01/17	05.54.20	34.5	25.5	4.1	L	CRETE

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0049	01/18	14.02.01	44.6	149.1	4.8	P	KURIL IS REGION
0050	01/18	21.12.02	37.5	48.7	4.9	P	NW IRAN
0051	01/18	23.26.12	44.2	8.2	4.1	P	N ITALY
0052	01/20	02.15.07	36.6	27.1	4.8	P	DODECANESE ISLANDS
0053	01/21	23.30.46	43.2	45.2	3.8	L	E CAUCASUS
0054	01/22	01.41.24	50.0	152.0	4.2	N	NW KURIL IS
0055	01/22	17.17.31	37.6	29.9	4.4	P	TURKEY
0056	01/23	08.30.47	52.0	158.0	4.2	N	NE COAST KAMCHATKA
0057	01/24	05.00.37	55.8	162.6	4.0	L	NEAR E COAST KAMCHATKA
0058	01/24	12.39.29	51.7	158.0	4.0	L	NEAR E COAST KAMCHATKA
0059	01/25	10.02.40	53.9	160.9	4.6	P	NEAR E COAST KAMCHATKA
0060	01/25	20.24.39	43.9	13.4	4.5	P	CENTRAL ITALY
0061	01/25	21.03.00	22.5	122.2	4.9	P	TAIWAN
0062	01/25	23.00.39	22.3	122.4	4.6	P	TAIWAN REGION
0063	01/25	23.22.17	43.8	13.4	4.8	P	CENTRAL ITALY
0064	01/26	04.34.27	54.0	156.9	4.1	L	KAMCHATKA
0065	01/26	09.14.16	55.8	164.7	3.8	L	KOMANDORSKY
0066	01/26	09.20.17	48.9	155.9	4.1	L	KURILE IS
0067	01/26	12.11.11	47.1	141.5	3.2	L	SAKHALIN
0068	01/26	12.54.39	34.5	25.5	4.0	I	CRETE
0069	01/26	15.56.27	48.9	155.9	4.8	L	KURILE IS
0070	01/27	14.06.46	55.4	163.6	3.8	I	OFF E COAST KAMCHATKA
0071	01/27	20.37.28	55.7	162.3	3.8	I	NEAR E COAST KAMCHATKA
0072	01/28	04.22.28	27.5	126.5	4.4	L	E CHINA SEA
0073	01/28	10.26.54	26.6	66.2	5.5	P	WEST PAKISTAN
0074	01/28	13.37.28	15.0	47.0	4.0	N	W ARABIAN PENINSULA
0075	01/28	20.29.05	40.8	81.4	4.5	L	S SINKIANG PROV
0076	01/28	20.29.19	43.0	78.0	4.4	N	KIRGIZ PROV
0077	01/28	21.54.04	45.0	136.0	4.0	N	NEAR E COAST OF E RUSSIA
0078	01/28	23.42.51	49.3	157.3	3.8	L	KURIL IS REGION
0079	01/29	06.49.11	32.9	76.0	4.7	P	KASHMIR-INDIA REGION
0080	01/29	09.50.58	29.0	62.0	3.9	N	S. IRAN
0081	01/30	03.56.41	40.9	120.2	3.9	L	NE CHINA
0082	02/01	10.16.09	55.8	162.8	4.1	I	E. COAST KAMCHATKA
0083	02/01	17.06.25	59.3	155.7	3.6	I	EASTERN SIBERIA
0084	02/02	04.26.59	55.7	162.0	3.7	L	EAST COAST OF KAMCHATKA
0085	02/02	09.58.51	46.8	146.4	3.6	L	NW KURIL IS
0086	02/02	17.56.39	50.7	160.1	3.6	L	KURIL IS
0087	02/02	21.19.49	38.9	21.2	4.6	P	GREECE
0088	02/03	02.29.22	40.7	48.4	5.1	P	E CAUCASUS
0089	02/03	07.22.49	23.4	102.4	4.5	P	YUANNAN PROVINCE CHINA
0090	02/04	02.42.19	43.8	13.3	4.8	P	CENTRAL ITALY
0091	02/04	03.34.56	51.4	118.0	4.2	L	E LAKE BAIKAL
0092	02/04	04.40.50	43.9	13.2	4.8	P	CENTRAL ITALY
0093	02/04	07.51.14	48.3	154.2	4.8	L	KURIL IS
0094	02/04	09.18.32	43.9	13.2	4.4	P	CENTRAL ITALY
0095	02/04	14.08.22	30.4	84.6	5.2	P	TIBET
0096	02/04	16.33.24	14.0	51.0	4.5	N	EAST ARABIAN PENINSULA

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0097	02/04	17.19.52	43.8	13.3	4.4	P	CENTRAL ITALY
0098	02/04	18.17.30	43.8	13.4	4.8	P	CENTRAL ITALY
0099	02/04	19.02.56	43.8	13.3	4.8	P	CENTRAL ITALY
0100	02/04	19.03.08	45.1	13.2	3.6	L	NORTHERN ITALY
0101	02/05	01.26.23	43.8	13.3	4.8	P	CENTRAL ITALY
0102	02/05	03.49.45	43.2	13.7	4.4	P	CENTRAL ITALY
0103	02/05	05.05.51	43.7	13.5	4.6	P	CENTRAL ITALY
0104	02/05	07.08.13	43.9	13.3	4.7	P	CENTRAL ITALY
0105	02/05	15.14.48	43.7	13.4	4.7	P	CENTRAL ITALY
0106	02/06	01.34.22	44.0	13.2	4.9	P	ADRIATIC SEA
0107	02/06	04.29.05	29.0	89.0	4.1	N	TIBET
0108	02/06	07.30.11	41.6	82.2	4.7	P	S SINKIANG PROV. CHINA
0109	02/06	08.03.43	46.0	80.0	4.3	N	EASTERN KAZKH
0110	02/06	21.44.29	43.8	13.2	4.4	P	CENTRAL ITALY
0111	02/07	07.49.48	52.3	160.1	4.8	P	OFF E COAST OF KAMCHATKA
0112	02/08	03.37.52	19.3	122.0	5.7	P	PHILIPPINE ISLANDS
0113	02/08	12.19.15	43.8	13.3	4.6	P	CENTRAL ITALY
0114	02/08	15.42.55	22.7	122.6	4.8	P	TAIWAN REGION
0115	02/09	14.21.51	29.4	50.8	4.3	P	SOUTHERN IRAN
0116	02/10	05.02.57	50.0	78.9	5.5	P	EASTERN KAZAKH SSR
0117	02/10	06.49.16	29.7	50.9	4.5	P	SOUTHERN IRAN
0118	02/10	09.04.09	29.6	50.9	3.9	P	SOUTHERN IRAN
0119	02/10	16.40.16	29.5	50.9	4.1	P	SOUTHERN IRAN
0120	02/11	05.55.46	39.9	77.4	4.9	P	SOUTHERN SINKIANG PROV CHINA
0121	02/11	12.20.43	29.0	87.0	4.3	N	TIBET
0122	02/11	13.58.49	55.5	165.2	3.9	L	KORMANDORSKY
0123	02/11	21.36.17	56.1	162.9	4.6	P	NEAR E COAST OF KAMCHATKA
0124	02/13	05.24.57	43.5	147.0	3.8	L	KURIL IS
0125	02/13	13.07.11	37.1	24.0	4.5	P	SOUTHERN GREECE
0126	02/13	22.36.54	55.2	165.5	3.9	L	KORMANDORSKY
0127	02/15	16.45.22	45.0	153.0	4.1	L	KURIL IS
0128	02/16	00.42.24	36.9	24.2	4.5	P	SOUTHERN GREECE
0129	02/16	23.19.20	41.7	80.7	4.8	P	SOUTHERN SINKIANG PROV. CHINA
0130	02/18	14.30.23	46.6	151.0	3.7	L	KURIL IS
0131	02/18	18.02.34	43.6	147.8	4.7	P	KURIL IS
0132	02/19	06.48.12	55.1	161.5	4.0	L	NEAR EAST COAST KAMCHATKA
0133	02/19	13.19.25	44.4	149.1	5.2	P	KURIL IS.
0134	02/19	13.54.46	44.6	149.1	5.4	P	KURIL IS.
0135	02/20	05.09.15	30.7	73.1	3.9	I	INDIA WEST PAKISTAN BORDER
0136	02/20	10.08.47	47.9	145.9	4.2	I	SEA OF OKHOTSK (D=397 KM)
0137	02/20	10.22.46	38.5	90.5	3.9	I	S. SINKIANG PROV. (D=16KM)
0138	02/20	20.06.11	50.8	141.5	4.1	I	SAKHALIN ISLAND
0139	02/21	22.00.59	54.4	161.3	4.8	I	NEAR E COAST KAMCHATKA
0140	02/21	23.02.56	41.0	22.3	4.0	I	YUGOSLAVIA
0141	02/22	01.14.48	36.4	70.6	5.3	I	HINDU KUSH REGION (D=212 KM)
0142	02/22	01.53.36	49.0	115.0	4.1	I	USSR MONGOLIA BORDER
0143	02/22	03.38.29	56.0	156.0	3.4	I	KAMCHATKA
0144	02/22	08.14.26	36.6	68.6	4.0	I	HINDU KUSH REGION

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0145	02/23	03.07.04	43.7	148.4	4.8	I	KURILE IS REGION (D=41 KM)
0146	02/23	03.21.31	44.2	148.4	4.7	I	KURILE ISLANDS (D=40 KM)
0147	02/23	03.42.41	43.9	148.3	4.9	I	KURILE IS REGION (D=39 KM)
0148	02/23	05.11.09	45.0	150.0	3.7	I	KURILE IS
0149	02/23	09.46.50	86.0	139.0	3.7	I	LOMONOSOV RIDGE
0150	02/23	12.55.32	36.8	71.5	3.8	I	AFGHAN-USSR BORDER (D=177 KM)
0151	02/23	14.00.49	38.1	71.7	4.3	I	AFGHAN-USSR BORDER
0152	02/23	19.37.29	55.0	163.0	3.7	I	OFF E COAST KAMCHATKA
0153	02/24	00.38.00	54.0	156.0	4.5	I	KAMCHATKA
0154	02/24	01.50.05	52.0	139.0	3.7	I	NEAR EAST COAST OF SIBERIA
0155	02/24	10.14.02	46.9	153.8	3.7	I	KURILE ISLANDS
0156	02/24	10.19.37	48.8	155.7	5.0	I	KURILE ISLANDS
0157	02/24	10.26.51	49.0	155.0	3.6	I	KURILE IS
0158	02/24	10.39.23	52.3	161.9	4.3	I	OFF KAMCHATKA
0159	02/24	12.17.39	52.0	150.0	3.8	I	SEA OF OKHOTSK
0160	02/24	12.24.54	49.0	155.0	3.7	I	KURILE IS
0161	02/24	18.17.34	49.0	158.0	3.5	I	KURILE IS REGION
0162	02/25	19.59.29	46.0	147.0	3.8	I	NW OF KURILE IS
0163	02/25	22.34.49	50.0	38.0	3.7	I	W RUSSIA
0164	02/25	22.43.07	49.2	156.0	4.0	I	KURILE ISLANDS
0165	02/26	02.12.57	49.2	156.2	4.9	I	KURILE ISLANDS
0166	02/26	02.11.46	31.2	69.2	3.8	I	WEST PAKISTAN
0167	02/26	05.58.22	46.8	152.6	4.9	I	KURILE ISLANDS
0168	02/26	09.04.32	55.0	162.0	3.3	I	NEAR E COAST KAMCHATKA
0169	02/26	15.06.42	53.3	138.7	3.8	I	NEAR EAST COAST OF SIBERIA
0170	02/26	18.32.26	51.0	149.0	4.0	I	SEA OF OKHOTSK
0171	02/26	18.56.13	27.1	100.9	4.7	I	YUNNAN PROV., CHINA
0172	02/26	23.31.10	50.6	97.3	5.3	I	USSR-MONGOLIA BORDER
0173	02/27	08.42.59	88.0	-74.0	3.3	I	LOMONOSOV RIDGE
0174	02/27	08.48.08	89.0	15.0	3.3	I	LOMONOSOV RIDGE
0175	02/27	10.03.03	87.0	53.5	4.9	I	N. OF FRANZ JOSEF LAND
0176	02/27	10.08.16	76.0	119.0	4.1	I	LAPTEV SEA
0177	02/27	11.03.19	90.0	-95.0	3.5	I	LOMONOSOV RIDGE
0178	02/27	14.58.32	52.0	156.7	4.5	I	KAMCHATKA (D=66 KM)
0179	02/27	17.50.25	86.2	77.2	4.4	I	N. OF SEVERNAYA ZEMLYA
0180	02/27	19.57.43	26.3	121.0	4.0	I	TAWIAN REGION
0181	02/27	22.15.03	55.0	93.2	4.5	I	CENTRAL RUSSIA
0182	02/28	01.04.22	46.0	148.0	4.2	I	NW OF KURILE IS
0183	02/28	05.18.56	36.7	71.4	4.2	I	AFGHAN-USSR BORDER
0184	02/28	11.35.31	56.0	163.0	4.1	I	NEAR EAST COAST OF KAMCHATKA
0185	02/28	14.49.55	54.1	160.7	3.3	I	NEC KAMCHATKA
0186	02/28	15.44.20	51.8	90.2	3.9	I	CENTRAL RUSSIA
0187	02/28	16.24.08	31.8	50.1	3.6	I	IRAN
0188	02/28	16.26.57	31.8	50.1	3.7	I	IRAN
0189	02/28	16.44.58	29.5	50.7	4.4	I	SOUTHERN IRAN (D=55 KM)
0190	02/28	17.22.55	31.2	50.1	4.2	I	IRAN
0191	02/28	17.32.29	43.4	132.2	4.5	I	NEC EASTERN RUSSIA (D=457 KM)
0192	02/28	18.08.52	31.2	48.6	3.8	I	W IRAN

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EVENT NO.	DATE	G.M.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0193	02/28	18.12.35	36.0	68.7	4.4	I	HINDU KUSH
0194	02/28	18.44.54	29.8	50.7	4.7	I	SOUTHERN IRAN (D=25 KM)
0195	02/28	18.47.45	27.2	53.5	3.9	I	S IRAN
0196	02/28	18.59.55	30.3	50.1	3.7	I	IRAN
0197	02/28	19.02.50	34.2	47.4	3.9	I	W IRAN
0198	02/28	19.04.08	32.3	50.4	3.4	I	IRAN
0199	02/28	19.04.57	32.3	50.4	3.3	I	IRAN
0200	02/28	19.06.57	28.2	51.2	4.4	I	SOUTHERN IRAN
0201	02/28	19.22.14	31.9	50.4	3.6	I	IRAN
0202	02/28	19.28.48	31.2	51.1	3.7	I	IRAN
0203	02/28	19.29.00	33.7	48.4	3.8	I	WESTERN IRAN
0204	02/28	19.32.19	31.3	49.7	4.2	I	WESTERN IRAN
0205	02/28	20.04.00	56.1	164.2	3.6	I	KOMANDORSKY ISLANDS
0206	02/28	23.01.26	29.8	50.4	4.2	I	SOUTHERN IRAN
0207	02/28	23.06.24	30.0	52.2	4.0	I	IRAN
0208	02/28	23.30.24	29.2	50.5	4.1	I	SOUTHERN IRAN
0209	02/29	23.38.32	27.9	56.8	3.7	I	SOUTHERN IRAN
0210	02/29	08.02.51	32.8	46.6	4.0	I	IRAN-IRAQ BORDER
0211	02/29	08.07.20	89.0	-51.0	3.4	I	LOMONOSOV RIDGE
0212	02/29	10.47.19	56.0	164.0	4.2	I	KOMANDORSKY IS REGION
0213	02/29	11.22.49	29.1	49.7	4.0	I	PERSIAN GULF
0214	02/29	19.47.59	39.0	74.0	4.0	I	S SINKIANG PROV
0215	02/29	23.42.40	55.6	162.2	4.1	I	OFF KAMCHATKA
0216	03/01	04.26.46	53.0	160.0	3.7	I	NEAR E COAST KAMCHATKA
0217	03/01	05.06.22	27.0	89.0	3.9	I	BHUTAN
0218	03/01	09.51.19	87.0	99.0	3.7	I	N OF SEVERNAYA ZEMLYA
0219	03/01	10.25.19	55.0	163.0	3.4	I	OFF EAST COAST OF KAMCHATKA
0220	03/01	16.58.59	51.0	162.0	3.5	I	OFF EAST COAST OF KAMCHATKA
0221	03/01	22.30.03	41.4	23.7	3.6	I	GREECE-BULGARIA BORDER
0222	03/02	06.17.29	53.0	167.0	3.6	I	KOMANDORSKY IS REGION
0223	03/02	12.48.48	72.4	2.3	4.5	I	NORWEGIAN SEA
0224	03/02	14.10.13	31.6	42.1	4.0	I	IRAQ
0225	03/02	19.57.42	43.0	76.0	3.5	I	ALMA ATA REGION
0226	03/02	23.09.10	44.9	148.1	4.6	I	KURILE ISLANDS (D=150 KM)
0227	03/03	00.39.23	53.0	159.2	4.1	I	NEC KAMCHATKA
0228	03/03	02.13.11	46.6	150.6	4.6	I	KURILE ISLANDS (D=136 KM)
0229	03/03	05.26.53	77.8	116.7	3.8	I	LAPTEV SEA
0230	03/03	08.13.55	55.8	163.9	4.1	I	OFF KAMCHATKA
0231	03/03	20.39.57	45.4	147.2	4.2	I	KURILE ISLANDS
0232	03/03	21.26.51	44.7	18.4	4.9	I	YUGOSLAVIA (D=32 KM)
0233	03/03	23.10.41	50.2	155.7	4.5	I	KURILE ISLANDS
0234	03/04	02.52.56	45.9	153.3	4.3	I	KURILE ISLANDS
0235	03/04	04.00.09	40.2	79.0	4.5	I	SOUTHERN SINKIANG PROV.
0236	03/04	08.22.16	42.1	83.3	4.4	I	N. SINKIANG PROV.
0237	03/04	14.42.05	41.0	21.0	3.6	I	YUGOSLAVIA
0238	03/04	16.24.11	38.3	74.0	5.1	I	S. SINKIANG PROV. (D=130 KM)
0239	03/04	19.27.57	36.8	71.4	4.0	I	AFGHAN-USSR BORDER (D=207 KM)
0240	03/05	19.07.43	21.0	73.0	4.0	I	INDIA

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0241	03/06	06.05.08	53.5	160.9	3.9	I	KAMCHATKA
0242	03/06	09.59.09	45.0	150.0	3.7	I	KURILE ISLANDS
0243	03/06	19.50.18	50.2	148.8	5.4	I	SEA OF OKHOTSK (D=592 KM)
0244	03/06	19.13.25	56.0	140.0	4.2	I	SEA OF OKHOTSK
0245	03/06	23.17.53	40.0	103.0	4.5	I	NORTHERN CHINA
0246	03/07	01.14.04	35.0	69.0	4.0	I	HINDU KUSH REGION (D=200 KM)
0247	03/07	05.21.21	43.0	21.0	2.7	I	YUGOSLAVIA
0248	03/07	07.09.49	28.0	56.0	4.0	I	SOUTHERN IRAN
0249	03/07	12.03.00	21.0	90.0	0.0	I	EAST PAKISTAN
0250	03/07	16.46.25	23.3	94.9	4.3	I	BURMA-INDIA BORDER (D=140 KM)
0251	03/08	02.38.11	51.2	151.9	4.2	I	SEA OF OKHOTSK
0252	03/08	03.51.24	49.0	157.0	4.0	I	KURILE IS REGION
0253	03/08	03.55.22	34.0	83.0	3.8	I	TIBET
0254	03/08	15.55.14	48.2	148.2	4.2	I	NW OF KURILE IS. (D=334 KM)
0255	03/08	21.49.11	27.6	56.7	4.9	I	SOUTHERN IRAN (D=45 KM)
0256	03/08	22.04.02	40.8	22.9	3.5	I	BULGARIA
0257	03/09	09.13.56	51.0	157.0	3.3	I	NEAR E COAST OF KAMCHATKA
0258	03/09	23.24.05	47.0	151.0	3.0	I	KURILE IS
0259	03/09	23.46.18	53.0	162.0	3.6	I	OFF E COAST OF KAMCHATKA
0260	03/10	04.56.57	49.8	79.2	5.5	I	EASTERN KAZAKH SSR (D=0KM)
0261	03/10	06.50.18	45.1	149.5	3.7	I	KURILE ISLANDS
0262	03/10	14.36.17	33.8	72.7	4.9	I	WEST PAKISTAN (D=45 KM)
0263	03/10	15.07.30	50.0	11.0	3.8	I	GERMANY
0264	03/10	17.44.32	55.4	164.2	3.8	I	KOMANDORSKY ISLANDS
0265	03/11	03.28.59	38.0	70.0	4.2	I	AFGHANISTAN-USSR BORDER
0266	03/11	06.47.07	82.7	142.3	3.6	I	LOMONOSOV RIDGE
0267	03/11	13.31.39	35.0	74.0	4.1	I	EASTERN KASHMIR
0268	03/12	02.04.21	45.0	155.0	4.1	I	KURILE IS REGION
0269	03/12	03.10.50	56.0	155.0	3.8	I	KAMCHATKA
0270	03/12	17.31.12	27.9	53.4	4.1	I	SOUTHERN IRAN
0271	03/13	02.11.05	49.0	158.0	3.8	I	KURILE IS REGION
0272	03/13	05.49.13	37.0	70.0	4.0	I	AFGHANISTAN USSR BORDER
0273	03/13	09.23.29	39.3	25.6	3.8	I	AEGEAN SEA (D=40 KM)
0274	03/13	13.28.33	54.9	165.6	4.0	I	KOMANDORSKY ISLANDS
0275	03/13	18.27.07	34.0	83.0	4.1	I	TIBET
0276	03/14	00.40.23	17.0	94.0	3.7	I	BURMA
0277	03/14	02.43.37	44.0	-116.0	3.7	I	WESTERN IDAHO
0278	03/14	14.05.46	39.3	29.4	5.4	I	TURKEY
0279	03/14	15.47.51	39.0	126.0	3.7	I	N KOREA
0280	03/15	00.21.25	39.5	72.3	3.7	I	TADZHIK (D=140 KM)
0281	03/15	06.00.33	30.4	84.5	5.3	I	TIBET
0282	03/15	12.08.01	39.0	30.0	3.7	I	TURKEY
0283	03/16	00.04.32	39.0	105.0	3.7	I	NORTHERN CHINA
0284	03/16	00.48.05	25.7	55.7	3.6	I	EASTERN ARABIAN PENINSULA
0285	03/16	02.59.06	33.2	71.0	3.5	I	WEST PAKISTAN
0286	03/16	05.22.54	52.2	152.2	4.5	I	NW OF KURILE IS. (D=435 KM)
0287	03/16	06.35.40	27.2	57.0	3.8	I	SOUTHERN IRAN
0288	03/16	07.52.51	36.4	82.5	3.4	I	SOUTHERN SINKIANG PROV

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0289	03/16	12.00.09	28.0	96.0	3.6	I	INDIA-CHINA BORDER REGION
0290	03/16	21.11.35	38.0	82.0	3.5	I	SOUTHERN SINKIANG PROV
0291	03/17	00.29.01	32.3	-115.6	4.1	I	CALIF-MEXICO BORDER (D=8 KM)
0292	03/17	07.49.02	49.0	156.2	5.2	I	KURILE ISLANDS
0293	03/17	07.52.33	27.9	54.3	4.0	I	SOUTHERN IRAN
0294	03/17	09.17.11	40.1	69.7	5.2	I	TADZHIK SSR (D=26 KM)
0295	03/17	17.11.28	28.0	54.0	3.9	I	SOUTHERN IRAN
0296	03/17	23.33.37	32.0	75.0	3.5	I	KASHMIR-INDIA BORDER
0297	03/18	00.41.48	46.9	143.7	5.0	I	SAKHALIN ISLAND (D=405 KM)
0298	03/18	07.11.55	47.0	81.0	3.6	I	EASTERN KAZAKH SSR
0299	03/18	13.52.14	57.0	163.0	3.6	I	NEAR E COAST OF KAMCHATKA
0300	03/18	18.29.33	50.6	156.7	4.7	I	KURILE ISLANDS
0301	03/18	19.17.25	54.0	150.0	3.7	I	SEA OF OKHOTSK
0302	03/18	19.54.19	41.0	72.0	3.2	I	KIRGIZ SSR
0303	03/19	03.34.31	42.7	38.1	3.9	I	BLACK SEA
0304	03/19	06.03.23	49.0	159.0	3.6	I	KURILE ISLANDS REGION
0305	03/20	08.04.48	44.0	147.0	4.4	I	KURILE IS
0306	03/20	10.54.35	38.0	73.0	3.9	I	TADZHIK SINKIANG BORDER
0307	03/20	14.08.12	47.0	154.0	4.0	I	KURILE IS
0308	03/20	20.08.31	30.0	61.0	3.4	I	SW AFGHANISTAN
0309	03/20	21.47.55	40.0	80.0	3.4	I	SOUTHERN SINKIANG PROV
0310	06/01	00.18.13	48.0	154.0	3.9	L	KURILE ISLANDS
0311	06/01	01.23.26	52.0	70.0	3.6	L	CENTRAL KAZAKH SSR
0312	06/01	11.22.15	44.0	103.0	3.7	N	MONGOLIA
0313	06/01	13.44.11	39.0	24.0	4.1	L	GREECE
0314	06/01	21.43.49	55.0	164.0	3.8	L	KOMANDORSKY ISLANDS
0315	06/02	00.12.13	30.0	53.0	4.1	N	SOUTHERN IRAN
0316	06/02	01.53.07	50.0	152.0	3.8	L	NW OF KURILE ISLANDS
0317	06/02	04.21.49	42.0	82.0	3.8	N	SOUTHERN SINKIANG
0318	06/02	04.22.16	42.0	82.0	3.7	N	SOUTHERN SINKIANG
0319	06/02	05.11.13	43.0	81.0	3.5	N	KAZAKH-SINKIANG BORDER
0320	06/02	06.30.49	42.0	81.0	3.9	N	SOUTHERN SINKIANG
0321	06/02	16.49.22	36.0	92.0	3.7	N	TSINGHAI PROV., CHINA
0322	06/02	20.32.55	28.4	95.9	4.3	P	CHINA-INDIA BORDER
0323	06/03	02.16.51	23.5	125.5	5.2	P	SW RYUKYU ISLANDS
0324	06/03	08.21.30	29.0	53.0	4.2	N	SOUTHERN IRAN
0325	06/04	03.37.49	30.0	54.0	4.2	N	SOUTHERN IRAN
0326	06/04	07.52.38	53.0	158.0	4.0	L	NEAR E COAST KAMCHATKA
0327	06/04	12.57.33	53.0	169.0	3.4	L	KOMANDORSKY ISLANDS
0328	06/04	13.02.07	54.0	165.0	3.5	L	KOMANDORSKY ISLANDS
0329	06/04	16.29.34	39.4	26.2	4.1	P	TURKEY
0330	06/04	23.22.18	33.0	97.0	3.5	N	TSINGHAI PROV. CHINA
0331	06/05	04.12.54	56.2	163.1	4.3	P	NEAR E COAST KAMCHATKA
0332	06/05	10.44.59	37.8	21.4	4.2	P	SOUTHERN GREECE
0333	06/05	11.17.57	34.0	46.0	3.9	N	IRAN-IRAQ BORDER
0334	06/05	11.52.53	29.8	70.3	4.8	P	PAKISTAN
0335	06/05	19.00.12	86.5	38.9	4.5	L	N. OF FRANZ JOSEF LAND
0336	06/06	02.04.44	44.0	148.0	3.4	L	KURILE ISLANDS

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0337	06/06	06.32.10	49.0	155.0	3.6	L	KURILE ISLANDS
0338	06/06	10.43.33	55.9	163.8	4.7	P	OFF E COAST KAMCHATKA
0339	06/07	01.27.57	49.8	78.2	5.5	P	EAST KAZAKH SSR
0340	06/07	06.00.20	56.0	166.0	3.8	L	KOMANDORSKY ISLANDS
0341	06/08	09.14.08	21.1	120.2	5.4	P	TAIWAN
0342	06/08	09.39.21	34.1	46.2	4.9	P	WESTERN IRAN
0343	06/08	10.17.44	21.0	120.2	4.9	P	TAIWAN
0344	06/08	12.46.15	41.0	44.0	4.1	L	TURKEY-USSR BORDER
0345	06/08	16.08.06	19.0	94.0	4.3	N	BURMA
0346	06/08	16.44.24	21.0	120.3	4.7	P	TAIWAN
0347	06/08	17.25.52	43.2	47.2	4.5	P	EASTERN CAUCASUS
0348	06/08	23.10.12	29.5	92.3	4.7	P	TIBET
0349	06/09	00.16.42	47.0	153.0	4.4	L	KURILE ISLANDS
0350	06/09	07.42.20	34.8	26.5	4.9	P	CRETE
0351	06/09	09.45.09	-8.8	-108.3	4.9	P	N. OF EASTER IS. CORDILLERA
0352	06/09	19.42.27	37.0	44.0	4.0	N	TURKEY
0353	06/10	03.39.33	31.0	51.0	3.6	N	IRAN
0354	06/10	11.29.11	28.2	66.5	4.5	P	PAKISTAN
0355	06/10	19.21.53	43.0	150.0	3.7	L	KURILE ISLANDS
0356	06/10	19.31.42	32.9	46.3	4.0	P	IRAN-IRAQ BORDER
0357	06/11	14.14.01	53.0	160.0	3.3	L	NEAR E COAST KAMCHATKA
0358	06/11	23.23.04	48.0	152.0	4.0	L	KURILE ISLANDS
0359	06/11	23.33.44	47.0	152.0	4.3	L	KURILE ISLANDS
0360	06/12	00.19.16	44.0	148.0	3.7	L	KURILE ISLANDS
0361	06/12	13.34.01	33.1	46.3	5.4	P	IRAN-IRAQ BORDER
0362	06/12	13.39.59	33.1	46.2	5.1	P	IRAN-IRAQ BORDER
0363	06/12	22.37.38	53.0	162.0	3.7	L	OFF E COAST KAMCHATKA
0364	06/13	00.55.37	33.1	46.3	5.1	P	IRAN-IRAQ BORDER
0365	06/13	04.53.30	55.0	162.0	3.8	L	NEAR E COAST KAMCHATKA
0366	06/14	00.49.54	40.1	51.9	4.7	P	CASPIAN SEA
0367	06/14	04.34.28	33.0	46.1	5.3	P	IRAN-IRAQ BORDER
0368	06/14	10.27.50	57.0	164.0	3.6	L	KOMANDORSKY ISLANDS
0369	06/14	12.11.28	31.0	52.0	3.5	N	IRAN
0370	06/14	12.35.05	27.0	56.0	3.6	N	SOUTHERN IRAN
0371	06/14	18.55.53	43.7	13.4	4.9	P	CENTRAL ITALY
0372	06/14	21.01.00	43.7	13.5	4.7	P	CENTRAL ITALY
0373	06/15	00.33.24	38.3	22.2	4.9	P	GREECE
0374	06/15	13.49.13	54.0	169.0	3.5	L	KOMANDORSKY ISLANDS
0375	06/15	14.19.02	38.0	28.0	3.3	N	TURKEY
0376	06/16	09.54.41	56.0	161.0	4.1	L	KAMCHATKA
0377	06/16	18.57.52	36.0	69.2	4.5	P	HINDU KUSH
0378	06/16	22.12.12	53.0	157.0	3.6	L	KAMCHATKA
0379	06/16	23.22.27	34.0	46.0	3.7	N	IRAN-IRAQ BORDER
0380	06/17	09.02.48	48.3	14.5	4.6	P	AUSTRIA
0381	06/17	19.18.21	44.2	149.1	4.6	P	KURILE ISLANDS
0382	06/18	04.30.47	33.0	83.0	4.3	N	TIBET
0383	06/18	09.10.54	48.0	154.0	3.9	L	KURILE ISLANDS
0384	06/18	09.18.49	40.0	73.0	4.3	L	TADZHIK-SINKIANG BORDER

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0385	06/18	22.32.52	39.0	31.0	4.4	L	TURKEY
0386	06/19	01.43.48	54.4	168.6	5.0	P	KOMANDORSKY ISLANDS
0387	06/19	18.02.29	44.0	147.0	4.0	L	KURILE ISLANDS
0388	06/19	18.07.53	43.8	151.5	4.5	P	KURILE ISLANDS
0389	06/19	22.41.42	48.0	157.0	4.1	L	KURILE ISLANDS
0390	06/20	05.17.42	29.0	52.0	4.0	N	SOUTHERN IRAN
0391	06/20	09.18.09	52.0	131.0	3.7	L	EASTERN RUSSIA
0392	06/20	15.34.37	32.0	75.0	3.6	N	KASHMIR-INDIA BORDER
0393	06/21	00.12.58	53.0	161.0	4.3	N	NEAR E COAST KAMCHATKA
0394	06/21	00.19.02	54.0	159.0	3.7	N	NEAR E COAST KAMCHATKA
0395	06/21	05.06.17	40.2	30.0	4.1	P	TURKEY
0396	06/21	10.42.45	54.0	161.0	4.3	L	NEAR E COAST KAMCHATKA
0397	06/21	14.53.09	37.0	41.0	3.8	N	TURKEY
0398	06/21	15.06.53	43.8	13.3	4.4	P	CENTRAL ITALY
0399	06/22	02.35.51	49.0	154.0	4.5	N	KURILE ISLANDS
0400	06/23	04.25.27	41.0	30.0	3.7	L	TURKEY
0401	06/23	07.18.14	37.0	21.0	3.4	N	SOUTHERN GREECE
0402	06/23	08.39.36	32.9	46.2	4.6	P	IRAN-IRAQ BORDER
0403	06/23	16.59.48	37.0	75.0	3.7	N	TADZHIK-SINKIANG
0404	06/24	06.57.02	28.0	54.0	3.5	N	SOUTHERN IRAN
0405	06/24	07.17.56	43.7	16.9	5.3	P	YUGOSLAVIA
0406	06/24	15.29.22	36.2	69.7	6.0	P	HINDU KUSH
0407	06/24	16.14.54	36.0	69.0	3.8	N	HINDU KUSH
0408	06/24	18.53.10	39.0	74.0	3.4	N	TADZHIK-SINKIANG
0409	06/25	04.59.19	44.0	15.8	4.4	P	YUGOSLAVIA
0410	06/25	07.55.45	36.3	69.6	4.7	P	HINDU KUSH
0411	06/25	17.35.50	54.0	160.0	4.1	L	NEAR E COAST KAMCHATKA
0412	06/26	08.08.25	21.1	120.3	5.0	P	TAIWAN
0413	06/26	17.32.32	56.0	158.0	3.6	L	KAMCHATKA
0414	06/26	20.59.03	36.0	69.0	3.7	N	HINDU KUSH
0415	06/27	05.07.42	38.0	65.0	4.0	N	AFGHANISTAN-USSR BORDER
0416	06/27	06.39.47	5.7	70.3	5.5	P	PAKISTAN
0417	06/27	06.49.0	4.0	159.0	3.8	L	NEAR E COAST KAMCHATKA
0418	06/27	09.05.53	26.2	96.6	4.4	P	BURMA
0419	06/27	10.48.56	29.7	70.3	5.4	P	PAKISTAN
0420	06/27	12.20.36	51.0	47.0	3.5	L	WESTERN RUSSIA
0421	06/27	15.59.35	36.3	69.5	5.1	P	HINDU KUSH
0422	06/28	01.43.56	43.0	20.5	4.9	P	YUGOSLAVIA
0423	06/28	03.09.59	33.0	91.0	3.6	N	TSINGHAI PROV., CHINA
0424	06/28	04.48.22	56.0	165.0	4.2	L	KOMANDORSKY ISLANDS
0425	06/29	06.00.22	55.0	164.0	3.4	L	KOMANDORSKY ISLANDS
0426	06/28	08.16.55	35.0	32.0	4.3	N	CYPRUS
0427	06/29	09.49.35	27.6	33.8	5.6	P	UNITED ARAB REPUBLIC
0428	06/28	14.58.49	53.0	161.0	3.9	L	OFF E COAST KAMCHATKA
0429	06/28	20.57.40	30.0	53.0	3.9	N	SOUTHERN IRAN
0430	06/29	00.41.02	54.0	69.0	3.7	L	CENTRAL KAZAKH SSR
0431	06/29	03.32.11	38.9	71.4	4.9	P	AFGHANISTAN-USSR BORDER
0432	06/30	17.49.33	27.2	56.8	4.6	P	SOUTHERN IRAN

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0433	06/30	18.57.43	24.3	121.1	4.9	P	TAIWAN
0434	06/30	20.31.33	30.0	53.0	4.0	N	SOUTHERN IRAN
0435	07/01	02.10.18	54.0	166.0	3.4	L	KOMANDORSKY ISLANDS
0436	07/02	12.56.07	30.1	50.8	5.4	P	IRAN (D=31 KM)
0437	07/02	14.05.06	30.0	50.8	4.6	P	IRAN (D=31 KM)
0438	07/03	02.10.00	30.1	50.8	5.0	P	IRAN (D=38 KM)
0439	07/03	03.32.50	36.2	71.1	4.3	P	AFGHAN-USSR BORDER (D=128 KM)
0440	07/03	12.31.05	30.0	53.0	4.0	N	SOUTHERN IRAN (Q=3)
0441	07/03	19.26.22	32.0	48.0	4.0	N	IRAN-IRAQ BORDER (Q=3)
0442	07/03	21.38.22	30.0	51.0	5.1	P	IRAN (D=43 KM)
0443	07/04	04.42.34	49.0	156.0	3.7	L	KURILE ISLANDS
0444	07/04	06.17.25	41.0	33.0	3.4	L	TURKEY
0445	07/04	09.28.07	28.0	54.0	3.9	N	SOUTHERN IRAN (Q=2)
0446	07/04	13.53.19	55.0	163.0	4.4	L	NEC KAMCHATKA
0447	07/04	21.47.57	49.0	151.0	3.6	L	KURILE ISLANDS
0448	07/05	01.04.44	29.0	54.0	3.8	N	SOUTHERN IRAN (Q=3)
0449	07/05	01.09.53	44.6	81.1	4.6	P	NORTHERN SINKIANG (D=N)
0450	07/05	02.41.54	44.0	86.0	3.5	N	NORTHERN SINKIANG (Q=3)
0451	07/05	04.09.49	43.6	87.9	4.3	P	NORTHERN SINKIANG (D=N)
0452	07/05	09.59.09	33.0	50.0	3.4	N	IRAN (Q=3)
0453	07/05	16.29.27	31.0	52.0	4.0	N	IRAN (Q=2)
0454	07/05	18.04.54	36.9	21.5	4.7	P	SOUTHERN GREECE (D=17 KM)
0455	07/05	21.41.09	30.0	54.0	4.1	N	SOUTHERN IRAN (Q=2)
0456	07/06	01.02.59	49.7	78.0	4.4	P	E. KAZAKH SSR (D=0 KM)
0457	07/06	05.41.43	27.0	55.0	3.1	N	SOUTHERN IRAN (Q=3)
0458	07/06	16.05.32	30.2	69.7	4.3	P	WEST PAKISTAN (D=53 KM)
0459	07/06	19.02.20	44.0	146.0	3.9	N	KURILE ISLANDS (Q=2)
0460	07/07	05.13.06	56.0	163.0	3.7	L	NEC KAMCHATKA
0461	07/07	12.04.12	20.5	98.1	5.0	P	BURMA (D=27 KM)
0462	07/07	23.43.41	32.0	102.0	3.7	N	SZECHWAN PROV. (Q=3)
0463	07/08	05.46.14	41.6	23.6	4.7	P	GREECE-BULGARIA BOR. (D=29)
0464	07/08	08.29.27	46.1	154.6	4.9	P	KURILE ISLANDS (D=N)
0465	07/08	21.07.27	48.0	151.0	4.2	L	KURILE ISLANDS
0466	07/09	13.21.22	36.0	19.0	4.0	L	MEDITERRANEAN SEA
0467	07/10	00.41.23	28.0	130.6	4.1	P	RYUKYU IS. REG. (D=30 KM)
0468	07/10	03.02.02	30.0	129.0	3.8	N	RYUKYU ISLANDS (Q=3)
0469	07/10	12.26.31	53.6	161.7	4.1	P	NEC KAMCHATKA (D=N)
0470	07/10	19.03.33	43.4	89.6	4.7	P	NORTHERN SINKIANG (D=N)
0471	07/11	04.20.41	37.0	72.0	4.2	L	AFGHANISTAN-USSR BORDER
0472	07/11	06.58.21	48.4	154.5	5.2	P	KURILE ISLANDS (D=62 KM)
0473	07/11	08.53.49	55.0	163.0	3.6	L	NEC KAMCHATKA
0474	07/11	15.33.48	32.0	60.0	3.7	N	IRAN (Q=3)
0475	07/11	22.49.02	36.1	45.7	4.7	P	IRAN-IRAQ BORDER (D=N)
0476	07/12	00.14.27	49.3	155.4	5.2	P	KURILE ISLANDS (D=N)
0477	07/12	01.21.18	33.0	73.0	3.5	N	PAKISTAN (Q=3)
0478	07/12	14.25.30	55.0	168.0	4.0	N	KOMANDORSKY ISLANDS (Q=2)
0479	07/12	19.41.48	37.3	21.9	4.1	P	SOUTHERN GREECE (D=62 KM)
0480	07/12	20.14.51	49.0	154.0	3.7	L	KURILE ISLANDS

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0481	07/13	05.27.44	31.0	89.0	3.9	N	TIBET (Q=2)
0482	07/13	15.05.44	44.0	150.0	4.2	N	KURILE ISLANDS REGION (Q=2)
0483	07/13	18.50.53	28.0	63.0	3.7	N	WEST PAKISTAN (Q=2)
0484	07/13	22.21.17	43.8	13.3	4.4	P	CENTRAL ITALY (D=N)
0485	07/13	23.02.25	22.0	123.0	3.8	N	TAIWAN REGION (Q=3)
0486	07/14	04.33.45	36.0	31.0	3.9	N	TURKEY (Q=2)
0487	07/14	13.04.12	30.1	50.8	4.4	P	IRAN (D=34 KM)
0488	07/14	13.18.11	30.0	51.0	3.9	N	IRAN (Q=2)
0489	07/14	17.49.13	30.0	51.0	3.4	N	IRAN (Q=2)
0490	07/14	18.50.33	30.0	132.0	3.9	L	RYUKYU ISLANDS REGION
0491	07/15	00.35.52	43.0	78.0	3.8	N	KIRGIZ SSR (Q=2)
0492	07/15	02.15.42	24.2	125.1	5.1	P	SW RYUKYU ISLANDS (D=29 KM)
0493	07/15	09.51.51	47.0	152.0	4.4	L	KURILE ISLANDS
0494	07/15	13.50.04	53.0	157.0	3.7	L	KAMCHATKA
0495	07/15	17.25.37	46.0	149.0	3.5	L	KURILE ISLANDS
0496	07/16	02.20.24	32.5	95.9	5.2	P	TIBET (D=N)
0497	07/16	02.46.51	38.3	43.3	4.9	P	TURKEY (D=40 KM)
0498	07/16	03.40.00	32.6	95.8	4.7	P	TIBET (D=N)
0499	07/16	13.48.05	23.7	121.3	4.6	P	TAIWAN (D=N)
0500	07/16	17.28.03	44.0	150.0	3.7	L	KURILE ISLANDS
0501	07/16	20.04.04	54.4	162.9	4.2	P	NEC KAMCHATKA (D=N)
0502	07/16	22.41.59	27.0	101.0	3.9	N	YUNNAN PROV. (Q=2)
0503	07/17	01.17.26	51.0	158.0	4.2	L	NEC KAMCHATKA
0504	07/17	03.14.05	34.0	30.0	3.9	L	EASTERN MEDITERRANEAN SEA
0505	07/17	08.29.52	55.0	159.6	5.3	P	KAMCHATKA (D=N)
0506	07/17	11.11.46	57.0	162.0	3.3	L	NEC KAMCHATKA
0507	07/17	16.15.28	35.0	22.0	3.4	N	MEDITERRANEAN SEA (Q=3)
0508	07/17	17.02.48	43.0	149.0	4.1	L	KURILE ISLANDS REGION
0509	07/17	20.50.54	55.1	159.5	4.5	P	KAMCHATKA (D=N)
0510	07/18	03.27.07	39.0	77.0	4.0	N	SOUTH SINKIANG (Q=1)
0511	07/18	06.04.53	51.0	66.0	3.7	L	CENTRAL KAZAKH SSR
0512	07/18	13.45.48	41.	23.8	4.0	P	GREECE-BULGARIA BORDER (D=N)
0513	07/18	22.06.50	45.0	148.0	5.0	P	KURILE ISLANDS
0514	07/19	10.26.48	52.0	162.0	4.2	L	NEC KAMCHATKA
0515	07/19	12.02.50	56.0	157.0	4.3	L	KAMCHATKA
0516	07/19	19.43.40	38.0	70.0	3.6	N	AFGHAN.-USSR BORDER (Q=3)
0517	07/20	10.04.18	28.0	91.0	3.9	N	TIBET (Q=2)
0518	07/20	13.58.43	36.0	55.0	4.3	N	IRAN (Q=2)
0519	07/21	14.07.08	37.5	73.0	4.1	P	TADZHIK SSR (D=197 KM)
0520	07/21	16.11.33	28.8	102.3	4.8	P	SZECHWAN PROV., CHINA (D=N)
0521	07/22	05.10.40	44.9	36.9	4.6	P	CRIMEA (D=N)
0522	07/22	16.41.04	31.4	91.5	5.5	P	TIBET (D=N)
0523	07/22	21.00.09	31.4	91.4	4.7	P	TIBET (D=N)
0524	07/23	18.17.25	33.0	24.0	3.9	L	MEDITERRANEAN SEA
0525	07/23	23.41.55	31.0	91.0	3.6	N	TIBET (Q=2)
0526	07/24	10.14.35	58.0	159.0	3.7	L	KAMCHATKA
0527	07/24	10.22.23	39.4	40.1	4.4	P	TURKEY (D=N)
0528	07/24	13.09.26	58.0	162.0	4.0	L	KAMCHATKA

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0529	07/24	14.58.14	35.8	80.6	4.8	P	KASHMIR-TIBET BORDER (D=N)
0530	07/25	01.56.07	38.7	21.4	4.5	P	GREECE (D=45 KM)
0531	07/26	02.26.08	45.2	150.7	4.3	P	KURILE ISLANDS (D=89 KM)
0532	07/26	18.57.25	40.0	47.0	4.0	N	EASTERN CAUCASUS (Q=3)
0533	07/27	00.08.46	43.6	13.4	4.4	P	CENTRAL ITALY (D=N)
0534	07/27	00.20.55	50.0	159.1	5.1	P	KURILE ISLANDS (D=N)
0535	07/27	16.41.30	25.4	130.5	5.1	P	RYUKYU IS. REG. (D=N)
0536	07/28	05.50.29	42.0	81.0	4.3	L	SOUTHERN SINKIANG PROV.
0537	07/29	08.22.17	37.0	29.0	3.8	L	DODECANESE ISLANDS
0538	07/29	17.10.35	32.0	68.0	3.8	N	AFGHANISTAN (Q=2)
0539	07/29	21.07.16	49.2	156.2	4.9	P	KURILE ISLANDS (D=N)
0540	07/30	01.30.09	39.9	24.2	4.4	P	AEGEAN SEA (D=N)
0541	07/30	04.01.07	49.2	156.2	5.1	P	KURILE ISLANDS (D=45 KM)
0542	07/30	11.41.01	41.0	70.0	4.0	N	TADZHIK SSR (Q=2)
0543	07/30	16.00.03	21.2	121.3	4.9	P	TAIWAN REGION (D=N)
0544	07/30	19.00.54	30.0	101.0	3.5	N	SZECHWAN PROV. (Q=2)
0545	07/30	19.46.24	41.0	27.0	3.6	L	TURKEY
0546	07/31	06.40.28	56.2	162.9	4.8	P	NEC KAMCHATKA (D=N)
0547	07/31	17.04.47	23.7	121.6	4.6	P	TAIWAN (D=24 KM)
0548	07/31	21.01.25	31.0	52.0	3.6	N	IRAN (Q=3)
0549	08/01	05.33.41	30.0	131.0	3.7	L	RYUKYU ISL
0550	08/01	09.44.47	36.0	72.0	4.1	N	PAKISTAN
0551	08/01	11.03.49	33.0	32.0	3.7	N	MEDITER SEA
0552	08/02	10.52.27	39.0	73.0	3.7	N	KIRGIZ USSR
0553	08/02	12.58.19	36.0	72.0	3.9	N	AFGHAN-USSR
0554	08/02	15.11.59	35.0	35.0	4.5	L	CYPRUS
0555	08/02	15.47.37	35.0	24.0	3.4	N	CRETE
0556	08/02	18.42.20	43.2	146.5	4.0	P	KURIL ISL
0557	08/02	21.33.06	28.2	57.0	4.7	P	S IRAN
0558	08/02	21.38.50	56.1	163.2	5.6	P	NEC KAMCHATKA
0559	08/02	23.03.29	28.1	56.9	5.0	P	S IRAN
0560	08/02	23.12.13	28.0	57.0	4.2	N	S IRAN
0561	08/03	02.04.26	37.9	32.5	4.3	P	TURKEY
0562	08/03	02.25.23	46.9	152.6	4.5	P	KURIL ISL
0563	08/03	03.57.16	56.0	162.0	4.0	L	NEC KAMCHATKA
0564	08/03	05.51.44	40.0	32.0	3.9	L	TURKEY
0565	08/03	12.36.47	59.5	163.2	5.3	P	KAMCHATKA
0566	08/03	21.39.26	37.7	32.7	4.5	P	TURKEY
0567	08/03	22.47.46	28.2	57.0	4.8	P	S IRAN
0568	08/03	22.57.23	28.0	133.0	4.0	N	E RYUKYU ISL
0569	08/04	04.30.30	47.0	151.0	4.0	L	KURIL ISL
0570	08/04	05.30.00	37.9	32.9	4.3	P	TURKEY
0571	08/04	09.19.21	28.0	57.0	4.0	N	S IRAN
0572	08/04	17.09.20	48.0	155.0	3.9	L	KURIL ISL
0573	08/04	17.51.13	49.2	156.1	5.7	P	KURIL ISL
0574	08/04	18.26.11	49.0	156.2	4.4	P	KURIL ISL
0575	08/05	00.49.03	49.0	157.0	3.8	L	KURIL ISL
0576	08/05	04.08.14	28.2	52.0	4.3	P	S IRAN

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0577	08/05	04.16.37	49.0	157.0	4.1	L	KURIL ISL
0578	08/05	04.52.03	49.0	156.3	4.7	P	KURIL ISL
0579	08/05	05.46.29	49.0	156.2	4.9	P	KURIL ISL
0580	08/05	05.52.01	49.0	156.0	4.3	L	KURIL ISL
0581	08/05	22.11.52	49.0	155.0	3.8	L	KURIL ISL
0582	08/06	00.53.12	44.7	32.6	4.5	P	BLACK SEA
0583	08/06	01.12.50	25.1	61.2	5.5	P	S IRAN
0584	08/06	01.32.16	25.7	60.9	5.0	P	S IRAN
0585	08/06	03.45.07	34.0	29.0	4.0	L	MEDITER SEA
0586	08/06	07.00.56	31.8	50.1	5.0	P	IRAN
0587	08/06	10.09.59	36.0	27.0	4.0	L	DODECANESE ISL
0588	08/06	10.59.17	49.0	157.0	4.2	L	KURIL ISL
0589	08/06	11.07.30	49.0	156.4	4.2	P	KURIL ISL
0590	08/06	14.17.30	55.0	164.0	3.7	L	KOMANDORSKY ISL
0591	08/06	18.22.25	55.3	166.1	4.5	P	KOMANDORSKY ISL
0592	08/07	05.42.48	38.0	32.0	4.0	L	TURKEY
0593	08/07	10.05.58	53.0	168.0	3.9	L	KOMANDORSKY ISL
0594	08/08	00.44.55	26.3	52.6	4.7	P	IRAN
0595	08/08	14.24.18	26.0	63.0	4.2	N	W PAKISTAN
0596	08/08	09.45.49	48.1	157.1	5.1	P	KURIL ISL
0597	08/09	17.19.42	55.0	158.0	3.8	L	KAMCHATKA
0598	08/08	19.09.34	25.0	61.1	5.5	P	S IRAN
0599	08/09	01.28.15	56.0	166.0	3.7	L	KOMANDORSKY ISL
0600	08/09	04.02.05	39.5	20.7	4.5	P	GREECE-ALBANIA
0601	08/09	09.40.46	39.0	33.0	4.4	L	TURKEY
0602	08/09	10.34.54	49.0	153.0	4.1	L	KURIL ISL
0603	08/09	14.43.39	50.0	119.0	3.8	L	USSR-CHINA BORDER
0604	08/09	16.28.14	41.0	72.0	4.5	L	TADZHIK USSR
0605	08/09	19.42.17	53.0	107.5	5.1	P	LAKE BAIKAL REG
0606	08/09	20.51.51	56.9	127.2	4.8	P	E RUSSIA
0607	08/09	21.09.10	47.0	153.0	4.1	L	KURIL ISL
0608	08/10	01.05.40	36.0	67.0	4.5	L	HINDU KUSH
0609	08/10	14.07.13	55.0	166.0	3.5	L	KOMANDORSKY ISL
0610	08/10	21.06.40	32.4	93.5	5.2	P	TIBET
0611	08/11	02.22.14	44.7	102.0	5.0	P	MONGOLIA
0612	08/11	06.49.05	41.0	14.0	4.0	L	S ITALY
0613	08/11	08.50.34	56.0	164.0	3.3	L	KOMANDORSKY ISL
0614	08/11	13.24.44	54.6	161.6	5.3	P	NEC KAMCHATKA
0615	08/11	16.52.32	31.0	52.0	3.5	N	IRAN
0616	08/12	02.42.24	36.0	69.0	3.9	N	HINDU KUSH
0617	08/12	23.47.57	41.1	22.7	4.9	P	YUGOSLAVIA
0618	08/13	02.16.28	33.0	93.0	4.1	N	TSINGHAI
0619	08/13	09.04.48	36.9	71.4	4.7	P	AFGANISTAN-USSR
0620	08/13	10.43.57	49.0	157.0	3.6	L	KURIL ISL
0621	08/13	11.32.30	49.0	154.0	3.6	L	KURIL ISL
0622	08/13	12.15.47	47.0	152.0	3.6	L	KURIL ISL
0623	08/13	18.21.56	54.0	160.0	3.6	L	NEC KAMCHATKA
0624	08/15	22.15.37	47.0	151.0	4.1	L	KURIL ISL

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EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0625	08/16	01.44.47	55.0	164.0	3.4	L	REG KAMCHATKA
0626	08/16	03.16.57	49.8	78.1	5.2	P	E KAZAKH
0627	08/16	05.42.23	36.0	49.0	3.5	N	NW IRAN
0628	08/16	08.21.14	55.0	164.0	3.6	L	KOMANDORSKY ISL
0629	08/16	10.15.32	38.0	71.0	3.6	N	AFGHANISTAN-USSR
0630	08/16	10.26.58	55.0	165.5	4.3	P	KOMANDORSKY ISL
0631	08/16	12.08.56	49.0	154.0	3.5	L	KURIL ISL
0632	08/16	19.27.10	45.0	149.0	4.5	L	KURIL ISL
0633	08/16	21.37.19	56.0	163.0	3.6	L	NEC KAMCHATKA
0634	08/17	22.34.32	44.0	149.0	4.5	L	KURIL ISL
0635	08/17	18.14.22	30.0	73.0	5.0	N	N INDIA
0636	08/18	00.42.22	45.0	150.0	3.5	L	KURIL ISL
0637	08/18	01.18.30	53.0	160.0	3.6	L	NEC KAMCHATKA
0638	08/18	02.49.15	52.0	159.0	3.5	L	NEC KAMCHATKA
0639	08/18	08.10.18	40.0	22.0	3.6	L	GREECE
0640	08/18	10.03.07	25.0	64.0	3.9	N	W PAKISTAN
0641	08/18	12.12.08	48.0	100.0	4.0	L	MONGOLIA
0642	08/18	18.42.19	23.8	126.6	4.8	P	RYUKYU ISL
0643	08/18	18.50.18	55.0	163.0	4.0	L	REG KAMCHATKA
0644	08/18	19.02.01	53.0	159.9	5.1	P	NEC KAMCHATKA
0645	08/18	21.23.12	50.0	153.0	5.1	L	NW KURIL ISL
0646	08/18	23.23.18	50.0	153.0	3.7	L	NW KURIL ISL
0647	08/19	04.20.41	22.0	94.0	3.9	N	BURMA-INDIA
0648	08/19	06.46.56	38.0	23.0	3.6	L	GREECE
0649	08/19	17.54.24	43.2	146.8	4.3	P	KURIL ISL
0650	08/19	21.56.10	45.0	149.0	3.5	L	KURIL ISL
0651	08/19	23.20.49	43.5	148.4	4.9	P	KURIL ISL
0652	08/20	02.59.58	49.5	48.2	5.7	P	W KAZAKH
0653	08/20	08.10.08	51.3	161.6	5.2	P	REG KAMCHATKA
0654	08/21	10.15.44	55.7	161.3	4.5	P	NEC KAMCHATKA
0655	08/21	13.45.49	47.0	151.0	4.0	L	KURIL ISL
0656	08/21	14.04.34	27.2	88.0	4.8	P	SIKKIM
0657	08/21	14.24.07	22.0	94.0	4.3	N	BURMA-INDIA
0658	08/21	18.55.07	27.2	88.0	5.1	P	SIKKIM
0659	08/22	02.44.10	35.0	25.0	4.0	L	CRETE
0660	08/22	03.37.00	47.0	153.0	4.1	L	KURIL ISL
0661	08/22	14.20.19	50.2	156.7	5.2	P	KURIL ISL
0662	08/22	16.34.56	40.0	79.0	4.6	L	S SINKIANG
0663	08/22	21.54.53	23.0	121.0	4.2	N	TAIWAN
0664	08/23	10.38.08	49.0	156.0	3.7	L	KURIL ISL
0665	08/23	21.14.16	39.0	29.0	4.0	L	TURKEY
0666	08/24	10.44.01	51.0	157.0	3.3	L	KURIL ISL
0667	08/24	15.32.39	50.0	159.0	3.8	L	KURIL ISL
0668	08/24	17.05.56	53.0	160.0	3.8	L	REG KAMCHATKA
0669	08/24	22.54.19	48.0	147.0	3.8	L	NW KURIL ISL
0670	08/25	04.11.20	71.0	139.0	4.0	L	NE SIBERIA
0671	08/25	10.19.34	47.0	152.0	3.6	L	KURIL ISL
0672	08/26	03.46.57	50.0	77.8	5.5	P	E KAZAKH

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0673	08/26	11.21.09	32.0	101.0	3.8	N	SZECHWAN
0674	08/27	01.14.57	38.0	30.0	3.6	N	TURKEY
0675	08/27	14.42.46	23.0	102.0	4.0	N	BURMA-INDIA
0676	08/27	14.49.32	22.6	100.7	4.8	P	BURMA-INDIA
0677	08/27	16.54.01	36.0	70.0	3.6	N	HINDU KUSH
0678	08/28	02.39.06	56.0	163.0	4.2	L	CEC KAMCHATKA
0679	08/28	05.59.56	73.3	55.1	6.3	P	NOVAYA ZEMLYA
0680	08/28	06.33.40	36.0	64.0	5.2	L	TURK-AFGAN BOR
0681	08/28	09.00.22	49.0	155.0	3.7	L	KURIL ISL
0682	08/28	15.27.10	33.0	49.0	3.7	N	W IRAN
0683	08/29	21.59.23	33.0	27.0	4.4	L	MEDITER SEA
0684	08/29	21.17.52	36.0	26.0	3.6	N	CRETE
0685	08/29	23.00.21	34.0	82.0	3.7	N	TIBET
0686	08/30	00.08.23	44.0	16.2	4.5	P	YUGOSLAVIA
0687	08/30	15.14.10	36.7	96.5	5.5	P	TSINGHAI
0688	08/30	17.52.23	40.0	94.0	4.2	N	S SINKIANG
0689	08/30	18.47.43	36.6	96.4	5.5	P	TSINGHAI
0690	08/30	18.51.35	36.7	96.3	5.5	P	TSINGHAI
0691	08/30	20.06.50	53.0	160.0	4.6	L	CEC KAMCHATKA
0692	08/30	20.42.46	38.0	96.0	4.3	N	TSINGHAI
0693	08/31	14.03.16	52.3	95.4	5.5	P	C RUSSIA
0694	08/31	17.22.47	49.0	106.0	3.7	L	MONGOLIA
0695	08/31	18.12.08	55.0	163.0	3.5	L	NEC KAMCHATKA
0696	11/01	04.06.45	38.5	65.2	4.4	P	S E UZBEK
0697	11/01	06.22.29	36.7	141.5	4.4	P	E C HONSHU
0698	11/01	16.39.51	43.4	146.3	4.8	P	KURIL ISL
0699	11/02	01.26.58	49.9	78.8	6.2	P	E KAZAKH
0700	11/02	12.52.23	39.4	73.2	4.3	P	TADAHIK-SINK
0701	11/03	09.41.33	31.0	52.0	4.0	N	IRAN
0702	11/03	23.58.09	35.0	69.5	5.5	L	AFGHANISTAN
0703	11/05	14. 6.59	36.0	72.0	3.8	N	AFGHAN-USSR
0704	11/05	19.25.42	35.1	24.9	5.2	P	CRETE
0705	11/06	06.15.06	36.9	70.8	4.2	L	HINDU KUSH
0706	11/06	07.07.10	34.1	33.3	3.7	L	CYPRUS
0707	11/06	09.31.56	34.6	25.1	4.3	L	CRETE
0708	11/06	10.56.09	27.0	88.7	4.8	P	SIKKIM
0709	11/06	12.18.30	38.2	69.0	4.1	P	TADZHIK
0710	11/06	16.22.20	44.0	148.9	4.3	L	KURIL ISL
0711	11/07	06.40.36	22.7	120.7	5.4	P	TAIWAN
0712	11/07	15.12.34	37.0	73.0	4.3	N	AFGHAN-USSR
0713	11/07	18.36.29	53.3	160.0	4.5	L	NEC KAMCHATKA
0714	11/07	22.41.33	34.9	24.8	4.6	P	CRETE
0715	11/08	11.11.47	47.3	151.0	3.7	L	KURIL ISL
0716	11/08	14.25.43	23.9	121.6	5.5	P	TAIWAN
0717	11/09	16.45.10	38.0	20.5	4.2	L	IONIAN SEA
0718	11/10	04.45.12	30.3	57.6	4.7	P	IRAN
0719	11/10	09.52.19	39.8	28.3	3.6	L	TURKEY
0720	11/10	18.22.39	50.1	154.3	3.6	L	KURIL ISL

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0721	11/11	13.57.23	49.9	129.6	3.8	L	E CHINA-USSR BDR
0722	11/11	14.08.58	41.0	77.0	3.8	N	KIRGIZ-SINK BDR
0723	11/12	02.46.34	55.5	162.0	4.8	P	NEC KAMCHATKA
0724	11/13	01.56.51	45.7	149.0	3.7	L	KURIL ISL
0725	11/14	18.27.04	14.0	52.0	3.9	N	E GULF OF ADEN
0726	11/15	03.36.28	22.0	123.0	4.1	N	TAIWAN
0727	11/15	18.15.07	29.0	53.0	3.9	N	S IRAN
0728	11/15	12.21.41	32.2	28.0	4.5	L	E MEDITER SEA
0729	11/15	14.56.53	37.0	73.0	3.9	N	AFGHAN-USSR
0730	11/16	03.13.06	35.0	24.0	3.8	L	CRETE
0731	11/16	10.10.47	34.0	46.0	3.9	N	IRAN-IRAQ BDR
0732	11/16	11.24.12	24.0	96.0	4.4	N	BURMA
0733	11/17	02.13.07	35.0	24.0	3.7	N	CRETE
0734	11/17	02.42.36	37.4	20.3	4.3	P	IONIAN SEA
0735	11/17	15.58.47	44.0	152.0	4.0	N	KURIL ISL
0736	11/17	17.12.02	44.4	148.6	3.7	L	KURIL ISL
0737	11/18	08.31.16	52.7	160.2	4.6	P	CEC KAMCHATKA
0738	11/18	12.52.53	44.8	148.5	3.9	L	KURIL ISL
0739	11/18	17.53.59	46.4	154.2	4.0	L	KURIL ISL
0740	11/19	20.53.01	43.0	82.0	4.0	N	N SINKIANG
0741	11/20	03.30.28	39.4	21.8	4.9	P	GREECE
0742	11/20	03.34.34	31.0	51.0	4.0	N	IRAN
0743	11/20	05.37.12	43.0	84.0	4.0	N	N SINKIANG
0744	11/21	02.47.14	23.8	121.6	5.7	P	TAIWAN
0745	11/21	02.51.25	23.0	121.0	4.4	N	TAIWAN
0746	11/21	11.51.50	58.2	63.0	3.6	L	C RUSSIA
0747	11/21	18.16.17	34.2	30.3	4.1	L	E MEDITER SEA
0748	11/21	19.12.58	37.0	73.0	4.0	N	AFGHAN-USSR
0749	11/22	03.01.53	37.0	76.0	4.0	N	S SINKIANG
0750	11/22	18.05.51	35.9	77.4	4.9	P	E KASKMIT
0751	11/24	01.35.27	38.8	22.3	4.3	P	GREECE
0752	11/24	03.48.38	40.1	21.6	5.4	L	GREECE
0753	11/24	09.00.08	52.8	51.1	4.7	P	W RUSSIA
0754	11/24	09.40.56	31.0	52.0	3.7	N	IRAN
0755	11/24	09.59.58	51.8	64.2	5.2	P	W KAZAKH
0756	11/25	02.11.39	52.3	158.9	3.4	L	NEC KAMCHATKA
0757	11/25	12.18.24	33.0	97.0	3.9	N	TSINGHAI CHINA
0758	11/25	13.42.34	56.3	123.3	5.1	P	E RUSSIA
0759	11/25	15.20.48	38.4	22.3	4.0	P	GREECE
0760	11/25	22.43.30	28.4	53.7	5.6	P	S IRAN
0761	11/26	14.52.31	52.1	158.8	5.2	P	NEC KAMCHATKA
0762	11/26	16.03.12	43.0	13.4	4.9	P	C ITALY
0763	11/27	05.11.11	52.8	62.1	3.9	L	W KAZAKH
0764	11/27	21.37.47	53.4	161.3	4.7	P	CEC KAMCHATKA
0765	11/28	13.26.15	33.8	27.9	4.8	P	E MEDITER SEA
0766	11/28	18.42.47	55.4	162.1	3.6	L	NEC KAMCHATKA
0767	11/29	01.57.57	32.2	26.5	4.4	L	E MEDITER SEA
0768	11/29	03.19.19	36.0	72.0	3.6	N	AFGHAN-USSR

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0769	11/29	16.49.36	36.0	72.0	4.1	N	AFGHAN-USSR
0770	11/30	07.34.16	73.3	144.9	3.6	L	SIBERIAN ISL
0771	11/30	11.25.32	44.1	13.0	4.6	P	ADRIATIC SEA
0772	11/30	18.31.19	52.8	160.7	3.9	L	CEC KAMCHATKA
0773	12/01	07.24.53	42.7	13.3	3.9	P	C ITALY
0774	12/01	07.32.01	29.0	52.0	4.7	N	S IRAN
0775	12/01	11.39.04	35.4	57.9	5.4	P	IRAN
0776	12/01	21.15.52	54.9	162.0	4.8	P	NEC KAMCHATKA
0777	12/02	03.57.54	33.5	141.0	4.1	P	CEC HONSHU
0778	12/02	13.28.24	35.4	27.1	5.1	P	DODECANESE ISL
0779	12/02	20.33.00	33.2	141.0	3.6	P	CEC HONSHU
0780	12/03	02.18.48	46.0	144.0	3.9	L	SAKHALIN ISL
0781	12/03	08.54.47	39.4	75.3	5.0	P	S SINKIANG
0782	12/03	10.07.57	46.0	145.0	4.0	L	SEA OF OKHOTSK
0783	12/03	13.13.13	53.8	160.6	4.4	P	NEC KAMCHATKA
0784	12/03	15.35.14	45.0	148.0	4.1	L	KURIL ISL
0785	12/03	22.08.32	31.9	131.5	5.3	P	KYUSHU
0786	12/04	03.24.55	35.2	27.2	4.3	P	DODECANESE ISL
0787	12/04	05.19.32	33.2	140.9	3.7	P	S OF HONSHU
0788	12/04	22.58.21	35.0	72.0	3.9	N	PAKISTAN
0789	12/05	03.02.13	33.3	141.0	4.2	P	CEC HONSHU
0790	12/05	04.11.07	33.3	140.8	4.7	P	S OF HONSHU
0791	12/07	02.10.47	42.0	119.0	3.7	L	NE CHINA
0792	12/08	04.39.46	85.3	91.2	4.5	P	N OF SEV ZEMLY
0793	12/09	05.36.45	37.0	69.0	4.1	N	AFG-USSR BOR
0794	12/09	20.16.05	24.0	121.0	4.0	N	TAIWAN
0795	12/09	12.21.27	50.0	157.0	3.8	L	KURIL ISL
0796	12/09	14.04.49	54.0	169.0	3.5	L	KOMANDORSKY ISL
0797	12/10	04.24.58	49.8	78.1	5.7	P	E KAZAKH
0798	12/10	04.27.08	50.1	78.8	0.0	P	E KAZAKH
0799	12/10	18.26.07	44.8	149.4	6.0	P	KURIL ISL
0800	12/10	18.39.37	45.0	151.0	4.2	L	KURIL ISL
0801	12/10	23.55.03	44.0	149.0	3.5	L	KURIL ISL
0802	12/11	00.22.20	44.8	149.2	4.8	P	KURIL ISL
0803	12/11	00.44.11	45.0	149.0	3.6	L	KURIL ISL
0804	12/10	01.13.27	44.0	150.0	3.7	L	KURIL ISL
0805	12/11	01.30.11	38.0	22.0	3.7	L	GREECE
0806	12/11	01.36.59	46.0	151.0	4.3	L	KURIL ISL
0807	12/11	02.05.20	44.7	149.4	4.3	P	KURIL ISL
0808	12/11	02.26.46	45.0	148.0	3.9	L	KURIL ISL
0809	12/11	05.52.00	46.0	151.0	3.6	L	KURIL ISL
0810	12/11	07.59.03	46.0	151.0	3.6	L	KURIL ISL
0811	12/11	11.10.27	44.0	153.0	3.6	L	KURIL ISL REG
0812	12/11	16.14.46	44.8	149.3	4.3	P	KURIL ISL
0813	12/11	19.32.52	44.7	149.3	4.8	P	KURIL ISL
0814	12/12	00.08.00	45.0	149.0	4.1	L	KURIL ISL
0815	12/12	00.36.04	53.1	160.0	4.7	P	NEC KAMCHATKA
0816	12/12	02.32.53	38.9	21.9	3.9	P	GREECE

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0817	12/12	05.17.02	47.0	143.0	3.6	L	SAKHALIN ISL
0818	12/12	09.03.56	44.1	151.0	5.7	P	KURIL ISL REG
0819	12/13	01.19.28	34.0	69.0	3.6	N	AFGANISTAN
0820	12/13	02.58.52	41.6	24.0	4.5	P	GREECE-BULGAR
0821	12/13	04.29.52	46.0	151.0	4.6	L	KURIL ISL
0822	12/13	23.48.33	45.0	150.0	4.1	L	KURIL ISL
0823	12/14	17.50.22	38.2	20.2	4.7	P	GREECE
0824	12/15	02.44.29	44.0	148.0	3.4	L	KURIL ISL REG
0825	12/15	14.41.32	44.6	149.4	4.7	P	KURIL ISL
0826	12/15	17.55.56	35.2	27.2	4.7	P	DODECANESE ISL
0827	12/16	23.00.00	85.6	85.1	4.4	P	N OF SEV ZEMLY
0828	12/17	00.18.34	44.7	149.2	5.7	P	KURIL ISL
0829	12/17	00.32.23	44.7	149.3	4.8	P	KURIL ISL
0830	12/17	00.41.32	46.0	150.0	4.3	L	KURIL ISL
0831	12/17	00.52.13	45.0	150.0	3.8	L	KURIL ISL
0832	12/17	01.18.17	44.8	149.2	4.7	P	KURIL ISL
0833	12/17	01.22.32	45.0	149.0	4.1	L	KURIL ISL
0834	12/17	01.26.04	44.7	149.4	4.8	P	KURIL ISL
0835	12/17	02.14.21	44.0	148.0	3.7	L	KURIL ISL
0836	12/17	05.45.58	44.7	149.3	4.6	P	KURIL ISL
0837	12/17	06.24.52	44.6	149.4	4.9	P	KURIL ISL
0838	12/17	06.54.07	38.0	69.0	3.4	N	TADZHIK USSR
0839	12/17	07.35.31	87.0	96.0	4.0	L	N OF SEV ZEMLY
0840	12/17	09.38.51	43.0	150.0	3.8	L	KURIL ISL REG
0841	12/17	12.38.12	46.0	151.0	3.7	L	KURIL ISL
0842	12/17	12.44.30	34.3	26.2	4.7	P	CRETE
0843	12/17	20.48.20	49.0	160.0	3.8	L	KURIL ISL REG
0844	12/19	19.34.31	35.5	27.8	4.6	P	DODECANESE ISL
0845	12/20	04.15.29	31.0	67.0	4.3	N	AFGANISTAN
0846	12/20	11.09.02	50.0	158.0	4.1	L	KURIL ISL REG
0847	12/20	13.09.46	32.0	72.0	3.7	N	PAKISTAN
0848	12/21	12.31.05	54.0	162.0	4.2	L	CEC KAMCHATKA
0849	12/22	00.34.25	42.0	15.0	3.7	L	CENTRAL ITALY
0850	12/22	03.01.20	56.0	164.0	4.1	L	KOMANDORSKY ISL
0851	12/22	03.13.44	55.0	164.0	4.1	L	CEC KAMCHATKA
0852	12/22	07.33.07	49.0	156.0	4.1	L	KURIL ISL
0853	12/22	18.42.39	24.0	94.0	3.9	N	BURMA-INDIA
0854	12/22	23.20.33	36.0	85.0	3.8	N	S SINKIANG
0855	12/24	19.11.28	35.0	72.0	4.0	N	PAKISTAN
0856	12/25	09.14.04	40.6	27.4	3.7	P	TURKEY
0857	12/25	12.30.53	53.1	162.9	4.8	P	CEC KAMCHATKA
0858	12/25	12.55.52	45.5	149.8	4.7	P	KURIL ISL
0859	12/25	18.55.58	53.0	159.4	5.7	P	NEC KAMCHATKA
0860	12/25	20.54.27	53.0	162.0	3.5	L	CEC KAMCHATKA
0861	12/26	06.13.50	24.0	67.0	3.6	N	PAKISTAN
0862	12/26	18.35.23	28.4	52.7	4.6	P	S IRAN
0863	12/27	09.15.11	39.0	25.0	3.6	N	AEGEAN SEA
0864	12/28	02.59.18	46.0	151.0	4.0	L	KURIL ISL

EVENT LIST 1 JAN 72 THROUGH 31 DEC 72

EVENT NO.	DATE	O.T.	COORDINATES LAT	LONG	MB		SEISMIC AREA
0865	12/28	04.26.59	50.0	79.0	4.5	L	E KAZAKH
0866	12/28	05.24.44	40.8	20.6	3.5	P	GREECE-ALBANIA
0867	12/28	21.52.19	49.0	157.0	4.1	L	KURIL ISL REG
0868	12/29	05.02.44	56.0	163.0	4.3	L	CEC KAMCHATKA
0869	12/29	11.26.29	53.8	169.0	4.3	P	KOMANDORSKY
0870	12/30	05.25.49	30.0	85.0	4.1	N	TIBET
0871	12/30	07.45.43	44.0	149.0	3.8	L	KURIL ISL
0872	12/30	09.08.08	32.0	48.0	3.8	N	IRAN-IRAQ BOR
0873	12/30	13.29.36	33.7	87.6	4.5	P	TIBET
0874	12/30	15.21.07	40.4	25.8	4.4	P	AEGEAN SEA
0875	12/30	23.54.06	33.6	87.7	4.9	P	TIBET
0876	12/31	00.56.53	33.0	88.0	4.1	N	TIBET
0877	12/31	02.49.24	36.0	85.0	3.9	N	S SINKIANG

Abbreviations:

I = ISM

L = LASA

N = NORSAR

P = PDE

APPENDIX II-B

BASIC DATA FOR CTA

CTA 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
310	68.4	3.90	0.0	0.0	0.0	0.0	201
311	97.7	3.60	4.15	3.93	0.0	1.25	101
312	75.3	3.70	0.0	0.0	0.0	0.0	201
313	127.3	4.10	0.0	0.0	0.0	0.0	201
314	76.6	3.80	0.0	0.0	0.0	0.0	201
315	102.6	4.10	0.0	0.0	0.0	0.0	201
316	70.3	3.80	4.18	3.80	3.11	0.34	101
317	85.8	3.80	0.0	0.0	0.0	0.0	201
318	85.8	3.70	0.0	0.0	0.0	0.0	201
319	86.9	3.50	0.0	0.0	0.0	0.0	201
320	86.4	3.90	4.27	3.76	0.0	0.0	601
321	76.0	3.70	3.77	3.28	0.0	0.0	101
322	68.7	4.30	0.0	3.56	0.0	0.0	301
323	48.1	*5.00	4.24	4.03	3.36	0.94	101
324	102.3	4.20	0.0	0.0	0.0	0.0	201
326	73.8	4.00	0.0	0.0	0.0	0.0	201
327	75.7	3.40	3.38	0.0	0.0	0.83	101
328	75.8	3.50	3.49	0.0	0.0	0.84	101
329	114.7	4.10	0.0	0.0	0.0	0.0	301
330	70.9	3.50	0.0	0.0	0.0	0.0	201
331	77.6	4.00	0.0	0.0	0.0	0.0	301
332	129.4	4.20	0.0	3.59	0.0	0.0	101
333	109.3	3.90	0.0	0.0	0.0	0.0	201
334	88.4	4.80	0.0	0.0	0.0	0.0	201
335	111.1	4.00	0.0	0.0	0.0	0.0	301
336	64.1	3.40	0.0	0.0	0.0	0.0	301
337	69.5	3.60	0.0	0.0	0.0	0.0	301
338	77.4	4.70	0.0	0.0	0.0	0.0	301
339	92.0	5.50	0.0	0.0	0.0	0.0	301
340	77.9	3.80	0.0	0.0	0.0	0.0	201
341	48.4	5.40	5.08	4.61	4.23	3.21	101
342	109.2	4.90	4.37	4.00	0.0	1.00	101
343	48.2	4.90	0.0	0.0	0.0	0.0	301
344	112.1	4.10	0.0	0.0	0.0	0.0	201
345	64.4	4.30	0.0	0.0	0.0	0.0	301
346	48.3	4.70	3.74	3.33	0.0	3.10	101
347	110.0	4.50	0.0	0.0	0.0	0.0	301
348	71.8	4.70	0.0	0.0	0.0	0.0	101
349	67.4	4.40	0.0	0.0	0.0	0.0	201
350	125.4	4.90	0.0	3.47	3.14	2.68	101
351	101.2	4.90	4.61	4.43	3.80	2.22	101
352	111.5	4.00	0.0	0.0	0.0	0.0	201
353	104.5	3.60	0.0	0.0	0.0	0.0	301
354	90.9	4.50	0.0	0.0	0.0	0.0	301
355	63.2	3.70	0.0	0.0	0.0	0.0	301
356	108.8	4.00	0.0	0.0	0.0	0.0	301
357	74.1	3.30	0.0	0.0	0.0	0.0	301
358	68.3	4.00	0.0	0.0	0.0	0.0	501
359	67.3	4.30	0.0	0.0	0.0	0.0	501

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
360	64.1	3.70	0.0	0.0	0.0	0.0	501
361	108.9	5.40	0.0	0.0	0.0	0.0	501
362	109.0	5.10	4.98	4.56	3.99	4.72	101
363	74.3	3.70	0.0	0.0	0.0	0.0	201
365	76.3	3.80	0.0	0.0	0.0	0.0	301
366	106.0	4.70	0.0	0.0	0.0	0.0	301
367	109.0	5.30	0.0	4.01	0.0	0.81	101
369	103.7	3.50	3.85	3.41	2.85	0.0	101
370	99.2	3.60	0.0	0.0	0.0	0.0	301
371	134.4	*4.50	4.04	3.93	3.49	0.69	101
415	95.7	4.00	0.0	0.0	0.0	0.0	201
416	88.4	5.50	0.0	0.0	0.0	0.0	501
417	74.9	3.80	0.0	0.0	0.0	0.0	201
418	66.8	4.40	0.0	0.0	0.0	0.0	201
419	88.4	*5.20	0.0	0.0	0.0	0.0	301
420	111.2	3.50	0.0	0.0	0.0	0.0	501
421	91.7	5.10	4.01	3.61	0.0	0.0	101
422	129.5	*4.60	0.0	0.0	0.0	0.0	201
423	74.8	3.60	0.0	0.0	0.0	0.0	201
424	77.7	4.20	0.0	0.0	0.0	0.0	301
425	76.6	3.40	0.0	0.0	0.0	0.0	201
426	120.9	4.30	0.0	0.0	0.0	0.0	201
427	118.5	5.60	4.92	4.63	4.28	2.06	101
428	74.2	3.90	0.0	0.0	0.0	0.0	201
429	102.6	3.90	0.0	0.0	0.0	0.0	301
430	99.0	3.70	0.0	0.0	0.0	0.0	201
431	91.4	*4.60	0.0	0.0	0.0	0.0	301
463	127.4	4.70	0.0	0.0	0.0	0.0	301
464	66.6	4.90	0.0	0.0	0.0	0.0	301
465	68.2	4.20	0.0	0.0	0.0	0.0	201
466	131.4	4.00	0.0	0.0	0.0	0.0	301
467	50.4	4.10	3.80	3.44	2.95	0.0	101
468	52.8	3.80	0.0	0.0	0.0	0.0	201
469	74.9	4.10	0.0	0.0	0.0	0.0	201
470	82.6	4.70	0.0	3.42	0.0	0.0	131
471	90.2	4.20	0.0	0.0	0.0	0.0	301
472	68.9	5.20	3.79	3.56	0.0	1.25	101
473	76.4	3.60	0.0	0.0	0.0	0.0	201
474	97.5	3.70	0.0	0.0	0.0	0.0	201
475	110.0	4.70	0.0	0.0	0.0	0.0	501
476	69.9	5.20	3.84	3.80	3.24	0.0	101
477	87.7	3.50	0.0	0.0	0.0	0.0	201
478	77.3	4.00	0.0	0.0	0.0	0.0	201
479	129.0	4.10	0.0	0.0	0.0	0.0	201
480	69.4	3.70	0.0	0.0	0.0	0.0	201
481	75.0	3.90	0.0	0.0	0.0	0.0	201
482	64.2	4.20	0.0	0.0	0.0	0.0	201
483	93.7	3.70	0.0	0.0	0.0	0.0	201
484	134.4	4.40	0.0	0.0	0.0	0.0	201

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
485	47.8	3.80	C.0	0.0	0.0	0.0	201
486	121.7	3.90	0.0	0.0	0.0	0.0	201
487	104.4	4.40	0.0	0.0	0.0	0.0	201
488	104.3	3.90	C.0	0.0	0.0	0.0	201
489	104.3	3.40	0.0	0.0	0.0	0.0	201
490	51.9	3.90	C.0	0.0	0.0	0.0	201
491	88.8	3.80	C.0	0.0	0.0	0.0	201
492	48.8	5.10	4.52	3.94	3.38	0.0	101
493	67.3	4.40	0.0	0.0	0.0	0.0	201
494	73.7	3.70	C.0	0.0	0.0	0.0	201
495	66.1	3.50	C.0	0.0	0.0	0.0	301
496	71.3	5.20	3.87	3.73	3.43	0.0	101
498	71.4	4.70	0.0	0.0	0.0	0.0	201
499	50.1	4.10	3.93	3.69	3.21	0.93	101
500	64.2	3.70	0.0	0.0	0.0	0.0	201
501	75.8	4.20	C.C	0.0	0.0	0.0	201
502	64.3	3.90	C.C	0.0	0.0	0.0	301
503	71.8	4.20	3.94	3.28	0.0	0.0	101
504	122.4	3.90	0.0	0.0	0.0	0.0	301
505	75.9	5.30	3.95	4.01	3.64	0.0	101
506	78.2	3.30	0.0	0.0	0.0	0.0	201
507	129.0	3.40	0.0	0.0	0.0	0.0	201
508	63.1	4.10	0.0	0.0	0.0	0.0	301
509	76.0	4.50	C.0	0.0	0.0	0.0	201
510	87.6	4.00	0.0	0.0	0.0	0.0	201
511	99.6	3.70	0.0	0.0	0.0	0.0	201
512	127.2	4.00	0.0	0.0	0.0	0.0	201
513	65.1	5.00	0.0	0.0	0.0	0.0	301
514	73.4	4.20	C.0	0.0	0.0	0.0	201
515	76.6	4.30	0.0	0.0	0.0	0.0	201
517	71.9	3.90	C.C	0.0	0.0	0.0	201
518	102.6	4.30	C.0	0.0	0.0	0.0	201
521	117.6	4.60	C.C	0.0	0.0	0.0	301
522	73.5	5.50	4.91	4.69	4.29	1.00	101
523	73.6	4.70	0.0	0.0	0.0	0.0	201
524	127.4	3.90	C.C	0.0	0.0	0.0	201
525	73.6	3.60	0.0	0.0	0.0	0.0	201
526	78.8	3.70	0.0	0.0	0.0	0.0	301
527	114.8	4.40	0.0	0.0	0.0	0.0	201
528	79.2	4.00	0.0	0.0	0.0	0.0	201
529	83.5	4.80	C.0	0.0	0.0	0.0	201
530	129.3	4.50	C.C	0.0	0.0	0.0	301
531	65.4	4.30	0.C	0.0	0.0	0.0	201
532	109.7	4.00	0.0	0.0	0.0	0.0	201
533	134.4	4.40	0.0	0.0	0.0	0.0	301
534	71.0	5.10	4.15	3.88	0.0	1.43	101
535	48.0	5.10	4.13	3.98	3.24	0.0	101
536	86.4	4.30	C.0	0.0	0.0	0.0	201
541	69.8	5.10	4.06	3.78	3.72	0.0	101

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
542	93.3	4.00	C.0	0.0	0.0	0.0	301
543	48.0	4.90	3.72	3.86	0.0	0.76	101
544	66.4	3.50	0.0	0.0	0.0	0.0	301
546	77.6	4.80	0.0	0.0	0.0	0.0	201
547	49.9	4.60	4.44	3.69	3.35	0.0	101
548	103.7	3.60	C.C	0.0	0.0	0.0	201
549	52.2	3.70	C.0	0.0	0.0	0.0	301
550	89.8	4.10	0.0	0.0	0.0	0.0	501
551	120.9	3.70	C.0	0.0	0.0	0.0	201
552	90.3	3.70	0.0	0.0	0.0	0.0	231
553	89.9	3.80	C.0	0.0	0.0	0.0	201
554	118.4	4.50	0.0	0.0	0.0	0.0	301
555	127.4	3.40	C.C	0.0	0.0	0.0	231
556	63.3	4.00	0.0	0.0	0.0	0.0	201
557	98.7	4.70	0.C	0.0	0.0	0.0	301
558	77.5	5.60	5.10	4.57	4.49	1.11	101
559	77.5	5.00	4.46	4.66	4.16	0.85	101
560	98.7	4.20	C.0	0.0	0.0	0.0	301
561	120.6	4.30	C.C	0.0	0.0	0.0	201
562	67.2	4.50	C.C	0.0	0.0	0.0	201
563	77.2	4.00	3.86	3.22	0.0	0.0	131
564	121.1	3.90	C.0	0.0	0.0	0.0	301
565	80.8	5.30	4.31	4.08	0.0	0.0	101
566	120.5	4.50	0.0	0.0	0.0	0.0	301
567	98.7	4.80	C.C	0.0	0.0	0.0	301
568	49.8	4.80	C.C	0.0	0.0	0.0	301
624	67.2	4.10	0.0	0.0	0.0	0.0	301
626	92.1	5.20	0.0	0.0	0.0	0.0	301
635	64.1	4.50	C.0	0.0	0.0	0.0	501
636	65.2	3.50	C.0	0.0	0.0	0.0	501
637	74.1	3.60	C.C	0.0	0.0	0.0	501
638	72.8	3.50	0.0	C.0	0.0	0.0	501
650	65.1	3.50	C.0	0.0	0.0	0.0	501
651	63.6	4.90	0.0	0.0	4.05	0.0	131
652	110.3	5.70	0.0	0.0	0.0	0.0	201
653	72.6	5.20	4.16	3.69	0.0	4.67	101
654	76.9	4.50	C.C	0.0	0.0	0.0	301
655	67.2	4.00	3.33	3.09	2.82	0.0	101
656	73.6	4.80	3.39	3.23	0.0	1.37	101
657	66.1	4.30	0.0	0.0	0.0	0.0	301
658	73.6	*4.50	C.0	0.0	0.0	0.0	301
659	126.6	4.00	0.0	0.0	0.0	0.0	221
660	67.4	4.10	3.34	2.73	0.0	0.0	131
661	70.9	5.20	C.C	3.81	3.41	0.0	101
662	86.7	4.60	0.0	0.0	0.0	0.0	321
663	49.6	4.20	0.C	0.0	0.0	0.0	301
664	69.6	3.70	0.0	0.0	0.0	0.0	301
665	123.4	4.00	0.0	0.0	0.0	0.0	201
666	71.7	3.30	C.0	0.0	0.0	0.0	201

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
667	71.0	3.80	0.0	0.0	0.0	0.0	321
668	74.1	3.80	0.0	0.0	0.0	0.0	301
669	68.1	3.80	0.0	0.0	0.0	0.0	231
696	95.7	4.40	0.0	0.0	0.0	0.0	301
697	57.0	4.40	5.04	4.73	4.24	0.0	101
698	63.5	4.80	3.93	3.80	3.13	0.0	101
699	91.8	6.20	0.0	0.0	0.0	0.0	501
700	90.4	4.30	0.0	0.0	0.0	0.0	501
701	103.7	4.00	0.0	0.0	0.0	0.0	301
702	91.2	5.50	4.88	4.32	4.32	0.80	101
730	127.4	3.80	0.0	0.0	0.0	0.0	201
731	109.3	3.90	0.0	0.0	0.0	0.0	231
732	65.9	4.40	3.30	3.41	0.0	1.35	101
733	127.4	3.70	0.0	0.0	0.0	0.0	231
734	130.3	4.30	0.0	0.0	0.0	0.0	201
735	64.3	4.00	0.0	2.86	3.03	0.0	161
736	64.5	3.70	0.0	0.0	0.0	0.0	201
737	73.8	4.60	0.0	0.0	0.0	0.0	231
738	64.9	3.90	0.0	0.0	0.0	0.0	251
739	66.9	4.00	0.0	0.0	0.0	0.0	231
741	128.9	*4.80	0.0	0.0	0.0	0.0	301
742	104.5	4.00	0.0	0.0	0.0	0.0	301
743	85.1	4.00	4.39	3.69	3.27	0.0	101
744	50.0	5.70	5.71	5.45	4.82	0.27	101
745	49.6	4.40	0.0	0.0	0.0	0.0	301
746	103.5	3.60	0.0	0.0	0.0	0.0	201
747	122.2	4.10	4.29	4.14	3.57	0.0	161
748	89.5	4.00	3.82	0.0	0.0	0.0	101
749	87.3	4.00	0.0	0.0	0.0	0.0	301
750	85.8	4.90	0.0	0.0	0.0	0.0	301
751	128.6	4.30	3.97	3.39	0.0	0.0	131
752	129.0	5.40	0.0	0.0	0.0	0.0	101
753	109.9	4.70	0.0	0.0	0.0	0.0	301
754	103.4	3.70	0.0	0.0	0.0	0.0	201
755	100.9	5.20	3.52	3.36	0.0	3.24	131
756	73.2	3.40	0.0	0.0	0.0	0.0	201
757	70.9	3.90	0.0	0.0	0.0	0.0	201
758	78.8	5.10	3.99	3.87	0.0	1.52	101
759	128.6	4.00	0.0	0.0	0.0	0.0	201
760	101.5	5.60	0.0	0.0	0.0	0.0	231
761	73.0	5.20	3.62	3.44	0.0	0.0	101
762	134.5	4.90	4.08	3.72	3.52	0.0	131
763	102.5	3.90	0.0	0.0	0.0	0.0	231
764	74.6	4.70	3.48	2.75	0.0	0.0	131
765	124.2	4.80	0.0	0.0	0.0	0.0	501
766	76.7	3.60	0.0	0.0	0.0	0.0	501
767	125.3	4.40	0.0	0.0	0.0	0.0	501
768	89.8	3.60	0.0	0.0	0.0	0.0	501
769	89.3	4.10	0.0	0.0	0.0	0.0	501

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LP RATIO	COMMENT
770	93.4	3.60	C.0	0.0	0.0	0.0	501
772	74.0	3.90	0.0	0.0	0.0	0.0	501
809	66.2	3.60	0.0	0.0	0.0	0.0	501
810	66.2	3.60	C.0	0.0	0.0	0.0	201
811	64.6	3.60	0.0	0.0	0.0	0.0	301
812	64.9	4.30	C.0	0.0	0.0	0.0	201
813	64.8	.****	4.00	3.66	3.40	0.0	101
814	65.1	4.10	3.42	3.02	0.0	0.0	101
815	74.1	4.70	0.0	0.0	0.0	0.0	201
816	128.9	3.90	0.0	0.0	0.0	0.0	201
817	67.1	3.60	C.0	0.0	0.0	0.0	201
818	64.3	5.70	0.0	4.38	4.03	1.10	101
819	91.2	3.60	C.0	0.0	0.0	0.0	201
820	127.1	*4.20	C.0	0.0	0.0	0.0	201
821	66.2	4.60	C.0	0.0	0.0	0.0	201
822	65.2	4.10	0.0	0.0	0.0	0.0	201
823	130.3	*4.30	0.0	0.0	0.0	0.0	201
824	64.1	3.40	0.0	0.0	0.0	0.0	201
825	65.0	4.70	4.22	3.66	0.0	2.63	101
826	124.8	4.70	0.0	3.51	0.0	0.0	131
827	107.9	4.40	0.0	0.0	0.0	0.0	201
828	64.8	5.70	5.33	5.28	5.02	2.55	101
829	64.8	4.80	0.0	0.0	0.0	0.0	301
830	66.2	4.30	C.0	0.0	0.0	0.0	201
831	65.2	3.80	0.0	0.0	0.0	0.0	201
832	64.9	4.70	C.0	0.0	0.0	0.0	201
833	65.1	4.10	0.0	0.0	0.0	0.0	201
834	64.8	4.80	C.0	0.0	0.0	0.0	201
835	6 .1	3.70	C.0	0.0	0.0	0.0	201
836	64.8	4.60	C.0	0.0	0.0	0.0	501
837	64.7	4.90	3.76	3.16	0.0	4.02	101
838	92.8	3.40	0.0	0.0	0.0	0.0	201
839	108.1	4.00	C.0	0.0	0.0	0.0	201
840	63.2	3.80	C.0	0.0	0.0	0.0	301
841	66.2	3.70	0.0	0.0	0.0	0.0	201
842	125.6	4.70	C.0	0.0	0.0	0.0	201
843	70.2	3.80	C.0	0.0	0.0	0.0	201
844	124.3	4.60	4.31	4.19	3.21	0.21	101
845	91.5	4.30	0.0	0.0	0.0	0.0	201
846	71.0	4.10	C.0	0.0	0.0	0.0	301
847	88.0	3.70	0.0	0.0	0.0	0.0	201
848	75.3	4.20	C.0	0.0	0.0	0.0	201
849	133.6	3.70	C.0	0.0	0.0	0.0	301
850	77.6	4.10	C.0	0.0	0.0	0.0	201
851	76.6	4.10	C.0	0.0	0.0	0.0	201
852	69.6	4.10	C.0	3.44	0.0	0.0	161
853	67.3	3.90	C.0	0.0	0.0	0.0	201
854	80.6	3.80	0.0	0.0	0.0	0.0	501
855	89.3	4.00	0.0	0.0	0.0	0.0	201

CTA 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
856	124.6	3.70	0.0	0.0	0.0	0.0	501
857	74.6	4.80	0.0	0.0	0.0	0.0	201
858	65.7	4.70	3.56	3.44	2.88	0.0	101
859	74.0	5.70	5.04	5.19	4.62	0.90	101
860	74.3	3.50	0.0	0.0	0.0	0.0	301
861	88.8	3.60	0.0	0.0	0.0	0.0	501
862	102.4	4.60	0.0	0.0	0.0	0.0	201
863	126.5	3.60	0.0	0.0	0.0	0.0	201
864	66.2	4.00	0.0	0.0	0.0	0.0	201
865	92.3	4.50	0.0	0.0	0.0	0.0	201
866	129.7	3.50	0.0	0.0	0.0	0.0	201
867	69.7	4.10	0.0	0.0	0.0	0.0	201
868	77.4	4.30	0.0	0.0	0.0	0.0	501
869	76.4	4.30	0.0	0.0	0.0	0.0	201
870	77.3	4.10	0.0	0.0	0.0	0.0	501
871	64.1	3.80	0.0	0.0	0.0	0.0	501
872	107.2	3.80	0.0	0.0	0.0	0.0	501
873	77.5	4.50	0.0	0.0	0.0	0.0	501
874	125.8	4.40	0.0	0.0	0.0	0.0	501
875	77.4	4.90	0.0	0.0	0.0	0.0	501

APPENDIX II-C
BASIC DATA FOR CHG

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
1	56.5	4.10	3.85	3.55	2.81	2.90	102
2	54.7	4.60	0.0	0.0	0.0	0.0	202
3	54.9	4.00	0.0	0.0	0.0	0.0	202
4	47.3	4.00	0.0	0.0	0.0	0.0	202
5	69.5	4.20	0.0	0.0	0.0	0.0	202
6	26.1	5.20	4.23	3.32	3.05	4.47	102
7	57.1	4.80	3.84	0.0	0.0	0.43	102
8	57.0	4.50	0.0	0.0	0.0	0.0	302
9	46.2	3.40	0.0	0.0	0.0	0.0	502
10	59.0	4.30	0.0	0.0	0.0	0.0	502
11	21.8	4.80	0.0	0.0	0.0	0.0	202
12	60.5	4.40	0.0	0.0	0.0	0.0	202
13	22.0	*4.60	4.60	3.27	2.98	1.34	102
14	32.3	3.90	4.23	4.38	3.40	0.78	102
15	41.3	3.80	0.0	0.0	0.0	0.0	202
16	47.3	4.50	0.0	0.0	0.0	0.0	202
17	71.4	4.00	0.0	0.0	0.0	0.0	202
18	29.5	4.50	0.0	0.0	0.0	0.0	202
19	63.7	4.00	3.80	3.39	0.0	1.50	102
20	59.0	3.90	0.0	0.0	0.0	0.0	202
21	31.6	4.70	3.51	0.0	0.0	3.98	102
22	23.2	4.70	3.65	3.18	0.0	4.72	102
23	45.2	5.20	3.14	0.0	0.0	3.97	102
24	29.8	3.90	0.0	0.0	0.0	0.0	202
25	51.3	4.20	2.81	0.0	0.0	0.0	602
26	19.0	4.70	5.46	3.93	0.0	1.24	102
27	19.2	4.60	4.76	4.09	4.11	1.05	102
28	60.6	3.60	0.0	0.0	0.0	0.0	302
29	60.4	4.30	3.56	0.0	0.0	2.86	102
30	48.5	3.80	0.0	0.0	0.0	0.0	202
31	20.3	5.00	4.16	4.16	3.78	1.00	102
32	60.4	4.40	0.0	0.0	0.0	0.0	202
33	62.8	3.90	0.0	0.0	0.0	0.0	202
34	47.6	4.00	3.93	0.0	0.0	0.0	102
35	62.2	4.40	0.0	2.65	0.0	0.0	102
36	67.7	4.90	3.93	4.14	3.93	2.32	102
37	60.5	4.80	4.10	0.0	3.58	0.60	102
38	60.3	4.00	4.23	0.0	3.56	0.98	102
39	54.4	5.30	5.05	4.68	4.17	6.40	102
40	66.0	3.90	3.48	0.0	0.0	5.99	302
41	48.4	5.10	0.0	3.59	2.90	2.44	102
42	54.0	3.90	0.0	0.0	0.0	0.0	202
43	41.8	4.70	3.19	0.0	0.0	5.06	102
44	27.5	5.40	0.0	0.0	0.0	0.0	302
45	26.3	4.60	0.0	0.0	0.0	0.0	302
46	59.7	3.80	0.0	0.0	0.0	0.0	202
47	60.1	3.90	0.0	0.0	0.0	0.0	202
48	65.3	4.10	0.0	0.0	0.0	0.0	202
49	48.8	4.80	0.0	0.0	0.0	0.0	202

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
50	47.9	4.90	3.89	0.0	2.95	0.0	102
51	77.6	4.10	0.0	0.0	0.0	0.0	202
52	64.6	4.80	C.0	0.0	0.0	0.0	202
53	51.1	3.80	C.0	0.0	0.0	0.0	202
54	52.2	4.20	0.C	0.0	0.0	0.0	202
55	62.3	4.40	C.0	0.0	0.0	0.0	202
56	56.4	4.20	0.0	0.0	0.0	0.0	202
57	59.8	4.00	C.0	0.0	0.0	0.0	202
58	56.3	4.00	0.0	0.0	0.0	0.0	302
59	58.5	4.60	C.0	3.67	0.0	1.33	102
61	22.0	4.80	4.03	0.0	3.20	0.61	102
62	22.2	4.60	3.96	3.91	0.0	0.57	102
60	74.0	*4.20	0.0	0.0	0.0	0.0	202
63	74.0	*3.70	0.0	0.0	0.0	0.0	502
65	61.0	3.80	C.0	0.0	0.0	0.0	302
66	54.4	4.10	C.0	0.0	0.0	0.0	202
67	44.7	3.20	C.C	0.0	0.0	0.0	202
68	54.4	4.00	3.18	0.0	0.0	4.01	102
69	54.4	4.80	0.0	0.0	0.0	0.0	202
70	60.3	3.80	C.C	0.0	0.0	0.0	202
71	25.6	3.80	C.0	2.54	0.0	4.17	102
72	26.7	4.40	C.C	0.0	0.0	0.0	202
73	31.0	5.90	4.17	2.80	0.0	1.69	102
74	49.7	4.00	0.C	0.0	0.0	0.0	302
75	26.7	4.5[illegible]	C.C	0.0	0.0	0.0	202
76	30.0	4.[illegible]	0.C	0.0	0.0	0.0	302
77	40.4	4.00	0.C	0.0	0.0	0.0	202
78	55.4	3.80	0.0	0.0	0.0	0.0	202
79	27.9	4.40	C.0	0.0	0.0	0.0	202
80	35.1	3.90	C.C	0.0	0.0	0.0	202
83	57.2	3.60	C.C	0.0	0.0	0.0	202
84	59.5	3.70	C.0	0.0	0.0	0.0	202
85	47.7	3.60	C.0	0.0	0.0	0.0	202
87	69.0	4.60	3.40	2.52	0.0	1.55	102
88	48.2	5.10	C.0	3.93	0.0	0.0	102
89	5.6	4.50	3.52	3.07	0.0	0.0	102
90	74.1	*4.50	4.68	4.57	0.0	1.41	102
91	35.9	4.20	C.C	0.0	0.0	0.0	202
92	74.1	4.80	3.33	0.0	0.0	1.54	102
93	53.2	4.80	C.0	0.0	0.0	0.0	202
94	74.1	4.40	3.27	3.27	0.0	1.07	102
95	17.4	5.20	3.87	3.64	0.0	0.96	102
96	46.1	4.50	3.02	2.88	0.0	0.78	102
97	74.1	*4.10	3.24	3.10	0.0	1.87	102
98	74.0	*4.30	C.0	0.0	0.0	0.0	302
99	74.1	*4.10	C.C	0.0	0.0	0.0	202
100	73.9	3.60	C.0	0.0	0.0	0.0	302
101	74.1	*4.30	0.0	0.0	0.0	0.0	302
102	73.9	*3.70	C.0	0.0	0.0	0.0	302

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
103	73.9	*4.00	C.0	0.0	0.0	0.0	302
104	74.0	*4.30	3.30	2.98	0.0	2.12	102
105	74.0	*4.20	3.43	3.13	0.0	2.39	102
106	74.1	*4.40	3.29	3.27	0.0	1.99	102
107	13.7	4.10	0.0	0.0	0.0	0.0	202
108	26.9	4.70	0.0	0.0	0.0	0.0	302
109	31.4	4.30	C.0	0.0	0.0	0.0	202
110	74.1	*3.80	0.0	0.0	0.0	0.0	302
111	75.3	4.80	0.0	0.0	0.0	0.0	202
112	21.8	5.70	4.42	0.0	4.19	3.52	102
113	74.1	*4.30	C.C	0.0	0.0	0.0	302
114	22.4	4.80	3.93	3.61	3.56	1.41	102
115	44.9	4.30	0.C	0.0	0.0	0.0	202
116	35.1	5.50	C.0	0.0	0.0	0.0	202
117	44.8	4.50	3.72	3.31	0.0	1.81	102
118	44.8	3.90	C.C	0.0	0.0	0.0	302
119	44.8	4.10	0.0	0.0	0.0	0.0	502
120	28.1	4.90	0.0	0.0	0.0	0.0	302
121	14.9	4.30	2.63	2.42	0.0	0.0	102
122	61.2	3.90	C.0	0.0	0.0	0.0	302
123	60.0	4.60	4.04	0.0	3.30	0.76	102
145	48.1	4.80	0.C	0.0	0.0	0.0	302
146	48.6	4.70	C.C	0.0	0.0	0.0	302
147	48.1	4.90	3.11	2.49	0.0	0.0	102
148	49.6	3.70	C.C	0.0	0.0	0.0	202
149	68.2	3.70	C.0	0.0	0.0	0.0	202
150	31.8	3.80	C.0	0.0	0.0	0.0	202
151	27.9	4.30	0.0	0.0	0.0	0.0	502
152	59.9	3.70	C.0	0.0	0.0	0.0	502
153	55.7	4.50	C.C	0.0	0.0	0.0	302
154	45.6	3.70	C.0	0.0	0.0	0.0	302
155	55.1	3.70	C.0	0.0	0.0	0.0	502
156	53.8	5.00	4.01	3.51	2.63	0.0	102
157	53.8	3.60	0.0	0.0	0.0	0.0	502
158	54.5	4.30	C.C	0.0	0.C	0.0	302
159	51.7	3.80	C.C	0.0	0.0	0.0	502
160	53.8	3.70	C.0	0.0	0.0	0.0	202
161	55.8	3.50	C.C	0.0	0.0	0.0	202
162	47.8	3.80	C.0	0.0	0.0	0.0	202
165	47.5	4.90	3.79	2.66	2.29	0.83	102
168	59.3	3.30	0.C	0.0	0.0	0.0	202
169	46.1	3.80	C.0	0.0	0.0	0.0	302
170	50.7	4.00	0.0	0.0	0.0	0.0	302
171	6.8	4.70	2.55	1.66	0.0	0.0	102
172	30.6	5.30	3.82	3.90	3.00	0.0	102
173	73.2	3.30	0.C	0.0	0.0	0.0	202
174	71.1	3.30	C.C	0.0	0.0	0.0	202
175	69.1	4.90	3.79	3.30	3.02	0.0	102
177	71.3	3.50	C.0	0.0	0.0	0.0	302

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
178	56.4	4.50	C.0	0.0	0.0	0.0	502
179	71.3	4.40	C.0	0.0	0.0	0.0	502
180	21.7	4.00	0.0	0.0	0.0	0.0	302
181	33.7	4.50	0.0	0.0	0.0	0.0	202
182	48.5	4.20	C.0	0.0	0.0	0.0	502
183	29.7	4.20	C.0	0.0	0.0	0.0	202
184	60.1	4.10	0.0	0.0	0.0	0.0	502
186	31.2	3.90	2.36	1.59	0.0	0.0	102
187	45.6	3.60	C.C	0.0	0.0	0.0	502
188	45.6	3.70	0.0	0.0	0.0	0.0	502
189	45.0	4.40	0.0	0.0	0.0	0.0	202
190	45.6	4.20	0.0	0.0	0.0	0.0	202
191	36.9	4.50	C.0	0.0	0.0	0.0	202
192	46.9	3.80	3.03	2.46	0.0	0.0	102
193	31.1	4.40	2.77	2.13	0.0	0.0	102
194	46.0	4.70	0.0	0.0	0.0	0.0	302
195	42.5	3.90	0.C	0.0	0.0	0.0	302
196	45.6	3.70	C.C	0.0	0.0	0.0	302
197	48.1	3.90	C.C	0.0	0.0	0.0	302
198	45.4	3.40	C.C	0.0	0.0	0.0	302
199	45.4	3.30	C.0	0.0	0.0	0.0	302
200	45.8	4.40	4.11	3.74	3.08	0.0	102
201	45.2	3.60	0.0	0.0	0.0	0.0	302
202	44.8	3.70	C.0	0.0	0.0	0.0	302
203	47.2	3.80	0.0	0.0	0.0	0.0	302
204	46.0	4.20	C.0	0.0	0.0	0.0	302
205	58.4	3.60	C.C	0.0	0.0	0.0	302
206	47.4	4.20	0.C	0.0	0.0	0.0	302
207	43.7	4.00	C.0	0.0	0.0	0.0	202
208	44.9	4.10	C.0	0.0	0.0	0.0	302
209	39.6	3.70	0.0	0.0	0.0	0.0	502
210	51.8	4.00	C.C	0.0	0.0	0.0	202
211	72.1	3.40	0.0	0.0	0.0	0.0	202
212	60.6	4.20	C.0	0.0	0.0	0.0	202
213	45.7	4.00	C.C	0.0	0.0	0.0	202
214	29.6	4.00	0.0	0.0	0.0	0.0	302
216	59.9	3.70	C.C	0.0	0.0	0.0	202
218	68.2	3.70	0.C	0.0	0.0	0.0	502
219	59.9	3.40	0.C	0.0	0.0	0.0	502
220	58.6	3.50	0.0	0.0	0.0	0.0	502
231	49.6	4.20	C.C	0.0	0.0	0.0	202
232	69.9	*4.40	2.68	2.17	0.0	0.0	202
283	20.9	3.70	0.0	0.0	0.0	0.0	102
284	41.1	3.60	C.0	0.0	0.0	0.0	502
285	31.7	3.50	C.0	0.0	0.0	0.0	202
286	50.7	4.50	0.0	0.0	0.0	0.0	502
287	37.7	3.80	C.0	0.0	0.0	0.0	302
288	25.3	3.40	C.C	0.0	0.0	0.0	302
289	9.6	3.60	C.0	2.42	1.95	0.0	502
							102

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
290	24.2	3.50	C.C	0.0	0.0	0.0	202
292	54.5	5.20	0.0	0.0	0.0	0.0	152
293	45.7	4.00	C.0	0.0	0.0	0.0	302
294	32.4	5.20	4.06	3.48	0.0	1.90	102
295	42.0	3.90	0.0	0.0	0.0	0.0	202
296	25.3	3.50	2.54	0.0	0.0	0.0	102
297	47.2	5.00	0.0	0.0	0.0	0.0	152
298	31.8	3.60	0.0	0.0	0.0	0.0	302
299	60.3	3.60	C.0	0.0	0.0	0.0	202
300	57.0	4.70	2.97	0.0	0.0	0.0	102
301	52.4	3.70	0.0	0.0	0.0	0.0	202
302	32.0	3.20	0.0	0.0	0.0	0.0	202
303	56.3	3.90	C.0	0.0	0.0	0.0	202
304	56.4	3.60	0.C	0.0	0.0	0.0	202
308	36.2	3.40	2.86	2.28	1.70	0.0	102
309	26.8	3.40	C.0	0.0	0.0	0.0	502
670	57.C	4.00	C.0	0.0	0.0	0.0	202
671	51.4	3.60	C.C	0.0	0.0	0.0	302
672	35.5	5.50	0.0	0.0	0.0	0.0	202
673	13.3	3.80	2.67	2.18	0.0	0.0	102
674	62.6	3.60	0.0	0.0	0.0	0.0	502
675	5.1	4.00	0.0	0.0	0.0	0.0	302
676	4.1	4.80	C.0	0.0	0.0	0.0	302
677	30.7	3.60	C.0	0.0	0.0	0.0	202
678	60.1	4.20	C.C	0.0	0.0	0.0	302
679	59.7	6.30	4.53	4.07	3.65	0.78	102
680	35.2	5.20	4.12	3.63	3.25	0.59	132
681	53.8	3.70	3.23	2.86	0.0	0.0	102
682	47.5	3.70	C.0	2.89	0.0	0.0	132
683	65.1	4.40	C.0	0.0	0.0	0.0	502
684	65.6	3.60	0.0	0.0	0.0	0.0	302
685	21.4	3.70	3.12	2.75	0.0	0.0	102
686	72.0	*4.30	0.0	0.0	0.0	0.0	202
701	44.0	4.00	0.C	0.0	0.0	0.0	302
702	30.7	5.50	5.16	5.04	4.61	0.0	102
703	29.3	3.80	C.C	2.65	0.0	0.0	132
704	66.6	5.20	4.82	4.46	4.58	0.80	102
705	30.6	4.20	0.C	0.0	0.0	0.0	302
706	59.8	3.70	0.0	0.0	0.0	0.0	302
707	66.5	4.30	0.0	0.0	0.0	0.0	232
708	12.5	*4.50	3.95	3.86	3.97	0.0	102
709	32.5	4.10	0.0	0.0	0.0	0.0	302
710	47.9	4.30	3.94	3.30	2.64	0.0	102
711	20.7	*5.30	4.59	4.45	3.69	2.78	102
712	29.1	4.30	3.50	0.0	0.0	0.0	102
713	57.1	4.50	0.0	0.0	0.0	0.0	202
714	66.7	4.60	C.0	0.0	0.0	0.0	302
715	50.8	3.70	0.0	0.0	0.0	0.0	202
716	21.7	5.50	4.62	4.56	3.76	0.45	102

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
717	69.7	4.20	C.C	0.0	0.0	0.0	302
718	39.1	4.70	4.46	4.07	3.72	0.76	132
719	63.4	3.60	0.0	0.0	0.0	0.0	302
720	53.7	3.60	C.C	0.0	0.0	0.0	302
721	39.6	3.80	0.0	0.0	0.0	0.0	322
722	29.1	3.80	C.0	0.0	0.0	0.0	202
723	59.4	4.80	0.0	0.0	0.0	0.0	302
724	49.1	3.70	0.0	0.0	0.0	0.0	232
725	45.2	3.90	0.0	3.08	2.69	0.0	102
726	22.7	4.10	3.73	3.34	0.0	0.0	102
727	43.0	3.90	C.0	0.0	0.0	0.0	202
728	64.3	4.50	C.0	0.0	0.0	0.0	302
729	29.1	3.90	C.0	0.0	0.0	0.0	302
730	67.3	3.80	0.0	0.0	0.0	0.0	302
731	49.2	3.90	C.C	0.0	0.0	0.0	202
732	5.9	4.40	4.01	3.47	0.0	0.0	102
733	67.3	3.70	C.C	0.0	0.0	0.0	202
734	69.9	4.30	C.0	0.0	0.0	0.0	302
735	50.7	4.00	C.C	0.0	0.0	0.0	302
736	48.4	3.70	0.C	0.0	0.0	0.0	302
737	57.8	4.60	3.81	0.0	3.02	0.0	102
738	48.5	3.90	0.0	0.0	0.0	0.0	302
739	52.7	4.00	C.0	3.09	0.0	0.26	132
741	68.5	*4.80	0.0	3.17	2.40	0.0	132
742	44.8	4.00	C.C	0.0	0.0	0.0	102
743	27.3	4.00	3.17	2.78	0.0	0.77	102
744	21.7	5.70	5.56	5.11	0.0	0.44	102
745	21.0	4.40	0.C	0.0	0.0	0.0	302
746	47.3	3.60	C.0	0.0	0.0	0.0	232
747	62.2	4.10	0.C	0.0	0.0	0.0	202
748	29.1	4.00	2.99	2.73	0.0	0.0	102
749	27.1	4.00	C.0	3.16	2.50	0.0	102
750	25.6	4.90	3.72	0.0	3.26	0.0	102
751	68.2	4.30	0.0	0.0	0.0	0.0	302
753	50.2	4.70	0.0	0.0	0.0	0.0	502
754	44.0	3.70	C.0	0.0	0.0	0.0	502
755	42.8	5.20	C.C	0.0	0.0	0.0	232
756	57.0	3.40	0.0	0.0	0.0	0.0	202
757	14.3	3.90	0.0	3.26	2.36	0.0	102
758	41.7	5.10	4.19	3.56	0.0	0.0	102
759	68.2	4.00	0.0	0.0	0.0	0.0	302
760	42.3	5.60	3.95	3.35	2.94	0.0	102
761	56.9	5.20	3.68	3.50	3.34	0.0	102
762	74.1	4.90	0.C	3.94	0.0	0.0	102
763	44.4	3.90	0.0	0.0	0.0	0.0	302
764	58.6	4.70	C.0	0.0	0.0	0.0	202
765	64.2	4.80	4.05	3.56	2.75	0.0	102
766	59.5	3.60	0.0	0.0	0.0	0.0	202
767	65.6	4.40	0.C	0.0	0.0	0.0	202

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
768	29.3	3.60	0.0	0.0	0.0	0.0	302
769	29.3	4.10	0.0	0.0	0.0	0.0	202
770	60.2	3.60	0.0	0.0	0.0	0.0	202
771	134.5	*4.40	0.0	0.0	0.0	0.0	501
771	74.2	*4.40	0.0	0.0	0.0	0.0	302
772	58.2	3.90	0.0	0.0	0.0	0.0	202
800	50.2	4.20	0.0	0.0	0.0	0.0	302
773	74.3	3.90	0.0	0.0	0.0	0.0	202
774	43.8	4.70	0.0	0.0	0.0	0.0	102
775	39.8	5.40	5.25	4.75	4.38	0.40	102
776	59.3	4.80	3.82	3.27	3.09	0.59	102
777	40.2	4.10	0.0	0.0	0.0	0.0	202
778	64.7	5.10	4.04	3.96	3.27	0.0	102
779	40.1	3.60	0.0	0.0	0.0	0.0	202
780	45.9	3.90	0.0	0.0	0.0	0.0	302
781	29.0	5.00	3.85	3.50	2.96	0.99	102
782	46.5	4.00	0.0	0.0	0.0	0.0	202
783	58.3	4.40	0.0	0.0	0.0	0.0	302
784	48.2	4.10	0.0	0.0	0.0	0.0	202
785	32.0	5.30	4.92	4.11	0.0	0.0	102
786	64.7	4.30	0.0	0.0	0.0	0.0	202
787	40.0	3.70	0.0	3.14	2.84	0.82	102
788	28.8	3.90	0.0	0.0	0.0	0.0	502
789	40.1	4.20	0.0	0.0	0.0	0.0	302
790	40.0	4.70	3.54	3.54	0.0	0.0	102
791	28.8	3.70	0.0	3.16	0.0	0.89	132
792	84.6	4.50	0.0	0.0	0.0	0.0	202
793	31.9	4.10	0.0	0.0	0.0	0.0	302
794	21.1	4.00	0.0	0.0	0.0	0.0	302
795	55.3	3.80	0.0	0.0	0.0	0.0	202
796	63.2	3.50	0.0	0.0	0.0	0.0	202
797	35.2	5.70	3.51	3.81	3.01	0.83	102
799	49.1	6.00	6.02	5.34	4.73	0.85	102
801	48.6	3.50	0.0	0.0	0.0	0.0	502
802	49.0	4.80	0.0	0.0	0.0	0.0	502
803	48.2	3.60	0.0	0.0	0.0	0.0	202
804	49.3	3.70	0.0	0.0	0.0	0.0	302
805	68.5	3.70	0.0	0.0	0.0	0.0	202
806	50.5	4.30	0.0	0.0	0.0	0.0	202
807	49.1	4.30	0.0	0.0	0.0	0.0	302
808	48.2	3.90	0.0	0.0	0.0	0.0	202
809	50.5	3.60	0.0	0.0	0.0	0.0	302
810	50.2	3.60	0.0	0.0	0.0	0.0	202
811	51.4	3.60	0.0	0.0	0.0	0.0	302
812	49.0	4.30	0.0	0.0	0.0	0.0	502
813	49.0	4.80	4.22	3.41	0.0	0.41	102
814	48.9	4.10	0.0	0.0	0.0	0.0	502
815	57.8	4.70	0.0	0.0	0.0	0.0	202
816	68.5	3.90	0.0	0.0	0.0	0.0	202

CHG 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
817	45.6	3.60	0.0	0.0	0.0	0.0	202
818	50.0	5.70	4.54	3.75	3.41	0.74	102
819	30.7	3.60	0.0	0.0	0.0	0.0	502
820	66.6	*4.20	0.0	0.0	0.0	0.0	502
821	50.5	4.60	0.0	0.0	0.0	0.0	202
822	49.6	4.10	0.0	0.0	0.0	0.0	202
823	69.9	*4.30	0.0	0.0	0.0	0.0	202
824	47.9	3.40	0.0	0.0	0.0	0.0	202
825	49.0	4.70	4.41	3.95	3.24	1.33	102
826	64.7	4.70	0.0	0.0	0.0	0.0	202
827	66.9	4.40	0.0	0.0	0.0	0.0	502
828	48.9	5.70	6.08	5.40	0.0	0.0	102
829	49.0	4.80	0.0	0.0	0.0	0.0	302
830	49.8	4.30	0.0	0.0	0.0	0.0	202
831	49.6	3.80	0.0	0.0	0.0	0.0	202
832	49.0	4.70	0.0	0.0	0.0	0.0	202
833	48.9	4.10	0.0	0.0	0.0	0.0	202
834	49.1	4.80	0.0	0.0	0.0	0.0	202
835	47.9	3.70	0.0	0.0	0.0	0.0	202
836	49.0	4.60	3.71	3.54	0.0	0.96	102
837	49.0	4.90	3.14	3.50	4.12	1.63	102
838	32.4	3.40	0.0	0.0	0.0	0.0	202
839	68.2	4.00	3.81	3.34	3.05	1.42	102
840	49.1	3.80	0.0	0.0	0.0	0.0	202
841	50.5	3.70	0.0	0.0	0.0	0.0	202
842	65.6	4.70	3.81	3.47	3.15	0.25	102
843	57.1	3.80	0.0	0.0	0.0	0.0	202
844	64.2	4.60	4.40	4.22	3.89	0.0	102
845	31.3	4.30	0.0	0.0	0.0	0.0	502
846	56.6	4.10	0.0	0.0	0.0	0.0	502
847	27.6	3.70	0.0	0.0	0.0	0.0	202
848	59.1	4.20	0.0	0.0	0.0	0.0	202
849	73.2	3.70	0.0	0.0	0.0	0.0	302
850	60.6	4.10	0.0	0.0	0.0	0.0	202
851	60.5	4.10	0.0	0.0	0.0	0.0	202
852	54.5	4.10	0.0	0.0	0.0	0.0	202
853	7.0	3.90	0.0	0.0	0.0	0.0	202
854	21.2	3.80	0.0	0.0	0.0	0.0	502
855	28.8	4.00	0.0	0.0	0.0	0.0	502
856	64.1	3.70	0.0	0.0	0.0	0.0	202
857	59.5	4.80	0.0	0.0	0.0	0.0	202
858	49.6	4.70	0.0	0.0	0.0	0.0	602
859	57.4	5.70	5.37	5.07	4.70	0.51	102
860	59.0	3.50	0.0	0.0	0.0	0.0	502

APPENDIX II-D

BASIC DATA FOR FBK

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
3	32.4	4.00	0.0	0.0	0.0	0.0	203
4	39.4	4.00	0.0	0.0	0.0	0.0	303
5	76.8	4.20	0.0	0.0	0.0	0.0	203
6	65.7	5.20	0.0	0.0	0.0	0.0	203
7	29.6	4.80	0.0	0.0	0.0	0.0	203
8	29.4	4.50	0.0	0.0	0.0	0.0	203
9	36.1	3.40	0.0	0.0	0.0	0.0	203
10	26.0	4.30	0.0	0.0	0.0	0.0	203
11	69.8	4.80	0.0	0.0	0.0	0.0	203
12	24.9	4.40	0.0	0.0	0.0	0.0	203
13	69.7	*4.60	0.0	0.0	0.0	0.0	203
14	53.7	3.90	0.0	0.0	0.0	0.0	203
15	44.7	3.80	0.0	0.0	0.0	0.0	203
16	40.8	4.50	0.0	0.0	0.0	0.0	203
17	66.6	4.00	0.0	0.0	0.0	0.0	203
18	72.4	4.50	0.0	0.0	0.0	0.0	203
19	21.9	4.00	0.0	0.0	0.0	0.0	603
20	25.2	3.90	0.0	0.0	0.0	0.0	203
21	69.8	4.70	0.0	0.0	0.0	0.0	203
22	68.4	4.70	0.0	0.0	0.0	0.0	303
23	83.7	5.20	0.0	0.0	0.0	0.0	203
24	73.4	3.90	0.0	0.0	0.0	0.0	203
25	70.5	4.20	0.0	0.0	0.0	0.0	503
26	71.4	4.70	6.17	3.84	0.0	0.35	103
27	70.5	4.60	0.0	0.0	0.0	0.0	303
28	25.5	3.60	0.0	0.0	0.0	0.0	203
29	24.9	4.30	0.0	0.0	0.0	0.0	203
30	39.2	3.80	3.69	0.0	0.0	0.0	103
31	71.8	5.00	5.90	4.64	6.11	1.43	103
32	24.9	4.40	0.0	0.0	0.0	0.0	203
33	23.7	3.90	0.0	0.0	0.0	0.0	203
34	41.0	4.00	0.0	0.0	0.0	0.0	203
35	77.4	4.40	0.0	0.0	0.0	0.0	503
36	79.9	4.90	0.0	0.0	0.0	0.0	203
38	25.1	4.00	3.48	0.0	0.0	0.50	103
39	27.9	5.30	0.0	0.0	0.0	0.0	203
37	24.9	4.80	0.0	0.0	0.0	0.0	203
40	16.2	3.90	0.0	0.0	0.0	0.0	203
41	81.6	5.10	0.0	0.0	0.0	0.0	203
42	32.9	3.90	0.0	0.0	0.0	0.0	203
43	40.7	4.70	3.58	0.0	0.0	1.31	103
44	68.6	5.40	0.0	0.0	0.0	0.0	303
45	69.3	4.60	0.0	0.0	0.0	0.0	303
46	25.5	3.80	0.0	0.0	0.0	0.0	203
47	25.2	3.90	0.0	0.0	0.0	0.0	203
48	80.5	4.10	0.0	0.0	0.0	0.0	203
49	39.3	4.80	0.0	0.0	0.0	0.0	203
50	76.8	4.90	0.0	0.0	0.0	0.0	203
51	69.3	4.10	0.0	0.0	0.0	0.0	203

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
52	78.4	4.80	C.C	0.0	0.0	0.0	303
53	71.4	3.80	0.0	0.0	0.0	0.0	203
54	33.9	4.20	0.0	0.0	0.0	0.0	303
55	77.5	4.40	0.C	0.0	0.0	0.0	303
56	29.9	4.20	0.0	0.0	0.0	0.0	503
57	25.3	4.00	C.C	0.0	0.0	0.0	303
58	30.1	4.00	0.C	0.0	0.0	0.0	303
59	27.3	4.60	0.0	0.0	0.0	0.0	203
60	70.3	*4.20	0.0	0.0	0.0	0.0	203
61	69.6	4.80	0.0	0.0	0.0	0.0	203
62	69.7	4.60	C.0	0.0	0.0	0.0	203
63	70.3	*3.70	C.C	0.0	0.0	0.0	203
65	24.4	3.80	0.0	0.0	0.0	0.0	203
66	33.1	4.10	C.0	0.0	0.0	0.0	203
67	40.6	3.20	0.0	0.0	0.0	0.0	203
68	80.5	4.00	0.0	0.0	0.0	0.0	203
69	33.1	4.80	0.C	0.0	0.0	0.0	203
70	25.1	3.80	C.0	0.0	0.0	0.0	203
71	25.5	3.80	C.0	0.0	0.0	0.0	203
72	63.4	4.40	0.0	0.0	0.0	0.0	203
73	84.7	5.90	C.C	3.92	0.0	0.72	103
74	99.3	4.00	0.C	0.0	0.0	0.0	203
75	67.5	4.50	C.0	0.0	0.0	0.0	203
76	66.3	4.40	0.C	0.0	0.0	0.0	203
77	44.5	4.00	0.0	0.0	0.0	0.0	203
78	32.2	3.80	3.19	0.0	0.0	0.89	103
80	83.2	3.90	C.0	0.0	0.0	0.0	203
81	54.3	3.90	0.0	3.37	0.0	2.44	103
82	25.2	4.10	0.0	0.0	0.0	0.0	203
83	26.0	3.60	C.C	0.0	0.0	0.0	203
84	25.6	3.70	C.0	0.0	0.0	0.0	203
85	38.7	3.60	0.0	0.0	0.0	0.0	203
87	75.9	4.60	C.0	3.54	0.0	0.67	103
88	73.6	5.10	0.0	0.0	4.40	0.0	103
89	76.8	4.50	4.38	0.0	0.0	1.82	103
90	70.3	*4.50	C.C	3.66	0.0	0.50	103
92	70.2	4.80	0.C	0.0	0.0	0.0	203
93	34.3	4.80	3.53	0.C	0.0	0.93	103
94	70.2	4.40	0.0	0.0	0.0	0.0	203
95	76.3	5.20	0.0	4.81	3.95	0.87	103
96	99.8	4.50	0.0	3.65	0.0	0.0	103
97	70.3	*4.10	3.37	3.11	0.0	0.78	103
98	70.3	*4.30	C.0	0.0	0.0	0.0	203
99	70.3	*4.10	0.0	0.0	0.0	0.0	203
100	69.0	3.60	0.0	0.0	0.0	0.0	203
101	70.3	*4.30	0.0	0.0	0.0	0.0	203
102	71.0	*3.70	C.C	0.0	0.0	0.0	203
103	70.9	*4.00	0.C	0.0	0.0	0.0	203
104	70.2	*4.30	0.C	0.0	0.0	0.0	203

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
105	70.4	*4.10	3.72	0.0	0.0	0.0	103
106	70.1	*4.40	0.0	0.0	0.0	0.0	203
107	76.3	4.10	0.0	0.0	0.0	0.0	203
108	66.5	4.70	0.0	0.0	0.0	0.0	203
109	63.0	4.30	0.0	0.0	0.0	0.0	203
110	70.3	*3.80	0.0	0.0	0.0	0.0	203
111	28.8	4.60	3.50	0.0	0.0	1.64	103
112	72.6	5.70	5.12	0.0	4.39	2.41	103
113	70.3	*4.30	0.0	0.0	0.0	0.0	203
114	69.3	4.80	0.0	3.56	0.0	0.84	103
115	84.6	4.30	0.0	0.0	0.0	0.0	203
116	59.5	5.50	0.0	0.0	0.0	0.0	203
117	84.3	4.50	0.0	0.0	0.0	0.0	203
118	84.4	3.90	0.0	0.0	0.0	0.0	203
119	84.5	4.10	0.0	3.37	0.0	2.11	103
120	69.4	4.90	4.30	4.04	3.73	0.47	103
122	28.8	3.90	0.0	0.0	0.0	0.0	203
123	25.0	4.60	0.0	3.61	0.0	0.63	103
124	41.1	3.80	0.0	0.0	0.0	0.0	203
125	77.8	4.50	0.0	0.0	0.0	0.0	303
126	24.5	3.90	3.82	0.0	0.0	0.0	103
127	37.4	4.10	0.0	0.0	0.0	0.0	203
128	78.0	4.50	0.0	0.0	0.0	0.0	503
129	66.8	4.80	0.0	3.37	0.0	0.39	103
130	36.9	3.70	0.0	0.0	0.0	0.0	203
131	40.7	4.70	0.0	3.15	0.0	1.43	103
132	26.2	4.00	0.0	0.0	0.0	0.0	203
133	39.5	5.20	0.0	3.50	0.0	1.40	103
134	39.3	5.40	4.73	0.0	4.17	1.05	103
135	79.2	3.90	0.0	0.0	0.0	0.0	203
136	38.1	4.20	0.0	0.0	0.0	0.0	203
137	67.0	3.90	0.0	0.0	0.0	0.0	203
138	37.7	4.10	0.0	0.0	0.0	0.0	203
139	26.8	4.80	4.02	3.80	0.0	1.37	103
140	67.9	4.00	0.0	0.0	0.0	0.0	203
141	74.3	5.30	0.0	3.86	4.25	0.83	303
142	32.9	4.10	0.0	0.0	0.0	0.0	203
143	27.9	3.40	3.21	0.0	0.0	0.99	103
144	74.5	4.00	0.0	0.0	0.0	0.0	203
145	40.4	4.80	0.0	3.58	0.0	2.59	103
146	39.9	4.70	3.46	0.0	0.0	0.92	103
147	40.2	4.90	3.52	0.0	0.0	1.28	103
148	38.6	3.70	0.0	0.0	0.0	0.0	203
149	24.2	3.70	0.0	0.0	0.0	0.0	203
150	73.7	4.10	0.0	0.0	0.0	0.0	203
151	72.4	4.30	0.0	3.10	0.0	1.22	103
152	25.7	3.70	0.0	0.0	0.0	0.0	603
153	29.3	4.50	0.0	0.0	0.0	0.0	203
154	37.8	3.70	0.0	0.0	0.0	0.0	203

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
155	35.5	3.70	0.0	0.0	0.0	0.0	203
156	33.2	5.00	4.33	0.0	0.0	0.95	103
157	33.4	3.60	C.C	0.0	0.0	0.0	303
158	28.0	4.30	C.C	0.0	0.0	0.0	303
159	33.3	3.80	0.C	0.0	0.0	0.0	203
160	33.4	3.70	C.0	0.0	0.0	0.0	203
161	33.1	3.50	C.C	0.0	0.0	0.0	203
162	39.1	3.8C	C.0	0.0	0.0	0.0	203
163	65.0	3.70	C.0	0.0	0.0	0.0	203
164	32.8	4.00	0.0	0.0	0.0	0.0	203
165	32.7	4.90	4.23	0.0	0.0	1.64	103
166	79.6	3.80	C.0	0.0	0.0	0.0	203
167	36.1	4.90	C.0	0.0	0.0	0.0	203
168	26.1	3.30	C.C	0.0	0.0	0.0	203
169	37.0	3.80	3.13	0.0	0.0	0.85	103
170	34.4	4.00	0.0	0.0	0.0	0.0	203
171	73.9	4.70	3.93	0.0	0.0	1.93	103
172	54.7	5.30	4.82	0.0	4.36	0.63	103
173	24.6	3.30	C.C	0.0	0.0	0.0	203
174	26.1	3.30	C.C	0.0	0.0	0.0	203
175	27.9	4.90	4.26	0.0	4.37	0.66	103
176	29.2	4.10	0.C	0.0	0.0	0.0	203
177	25.0	3.50	C.0	0.0	0.0	0.0	203
178	30.4	4.50	C.C	0.0	0.0	0.0	203
179	27.9	4.40	3.24	3.14	0.0	0.0	103
180	66.8	4.00	C.0	0.0	0.0	0.0	203
181	51.3	4.50	C.0	0.0	0.0	0.0	303
182	38.7	4.20	C.C	0.0	0.0	0.0	203
183	73.8	4.20	C.0	0.0	0.0	0.0	203
184	25.0	4.10	C.0	0.0	0.0	0.0	203
185	27.2	3.30	0.C	0.0	0.0	0.0	203
186	55.0	3.90	3.14	0.0	0.0	0.97	103
187	82.3	3.60	0.0	0.0	0.0	0.0	203
188	82.3	3.7C	C.C	0.0	0.0	0.0	303
189	84.5	4.30	C.C	0.0	0.0	0.0	203
190	82.9	4.20	C.C	0.0	0.0	0.0	203
191	47.1	4.5C	C.0	0.0	0.0	0.0	203
192	83.0	3.80	C.C	0.0	0.0	0.0	203
193	75.1	4.40	0.C	0.0	0.0	0.0	303
194	84.2	4.70	C.C	0.0	0.0	0.0	303
195	86.4	3.90	C.C	0.0	0.0	0.0	303
196	83.8	3.70	C.0	0.0	0.0	0.0	303
197	80.2	3.9C	C.C	0.0	0.0	0.0	303
198	81.7	3.4C	C.0	0.0	0.0	0.0	303
199	81.7	3.30	0.C	0.0	0.0	0.0	303
200	85.7	4.4C	C.C	0.0	0.0	0.0	303
201	82.1	3.60	C.C	0.0	0.0	0.0	303
202	82.7	3.70	C.C	0.0	0.0	0.0	203
203	80.6	3.80	0.0	0.0	0.0	0.0	203

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
204	82.8	4.20	0.0	0.0	0.0	0.0	303
205	24.4	3.60	3.26	0.0	0.0	7.47	103
206	84.2	4.20	0.0	0.0	0.0	0.0	203
207	83.8	4.00	0.0	0.0	0.0	0.0	203
208	84.5	4.10	0.0	0.0	0.0	0.0	203
209	85.2	3.70	0.0	0.0	0.0	0.0	203
210	81.6	4.00	0.0	0.0	0.0	0.0	203
211	25.2	3.40	0.0	0.0	0.0	0.0	203
212	24.6	4.20	0.0	0.0	0.0	0.0	303
213	85.0	4.00	0.0	0.0	0.0	0.0	303
214	71.0	4.00	3.76	0.0	0.0	0.0	103
216	28.3	3.70	0.0	0.0	0.0	0.0	203
217	78.2	3.90	0.0	0.0	0.0	0.0	203
218	26.4	3.70	0.0	0.0	0.0	0.0	303
219	25.7	3.40	0.0	0.0	0.0	0.0	303
220	28.9	3.50	0.0	0.0	0.0	0.0	203
221	73.3	3.60	0.0	0.0	0.0	0.0	203
222	25.3	3.60	0.0	0.0	0.0	0.0	203
223	41.4	*4.30	0.0	0.0	0.0	0.0	203
224	83.2	4.00	0.0	0.0	0.0	0.0	203
225	66.8	3.50	0.0	0.0	0.0	0.0	303
226	39.5	4.60	0.0	0.0	0.0	0.0	303
227	28.6	4.10	0.0	0.0	0.0	0.0	203
228	37.1	4.60	0.0	0.0	0.0	0.0	203
229	28.7	3.80	0.0	0.0	0.0	0.0	203
230	24.7	4.10	0.0	0.0	0.0	0.0	203
231	39.5	4.20	0.0	0.0	0.0	0.0	203
232	69.9	*4.40	0.0	3.18	0.0	1.73	103
233	32.2	4.50	0.0	3.42	0.0	0.81	103
234	36.5	4.30	0.0	0.0	0.0	0.0	603
235	68.6	4.50	0.0	0.0	0.0	0.0	203
236	65.8	4.40	0.0	0.0	0.0	0.0	203
237	73.9	3.60	3.14	0.0	0.0	1.14	103
238	71.7	5.10	0.0	0.0	0.0	0.0	203
239	73.7	*3.70	0.0	0.0	0.0	0.0	203
240	88.5	4.00	0.0	0.0	0.0	0.0	203
241	27.6	3.90	2.93	2.73	0.0	0.78	103
242	38.6	3.70	0.0	0.0	0.0	0.0	203
243	35.1	5.40	0.0	4.17	0.0	1.15	103
245	61.6	4.50	0.0	0.0	0.0	0.0	203
247	71.8	2.70	0.0	0.0	0.0	0.0	203
248	85.2	4.00	0.0	0.0	0.0	0.0	203
249	83.4	0.0	0.0	0.0	0.0	0.0	203
250	79.6	4.30	0.0	0.0	0.0	0.0	203
251	33.0	4.20	0.0	0.0	0.0	0.0	203
252	32.6	4.00	0.0	0.0	0.0	0.0	203
253	73.4	3.80	0.0	0.0	0.0	0.0	203
254	38.3	4.20	0.0	3.18	0.0	0.68	103
255	85.5	*4.60	0.0	3.49	0.0	1.87	103

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
256	74.1	3.50	3.43	0.0	0.0	2.93	103
257	31.0	3.30	0.0	0.0	0.0	0.0	203
258	36.6	3.00	0.0	0.0	0.0	0.0	203
259	27.5	3.60	0.0	0.0	0.0	0.0	203
260	59.9	5.50	3.54	3.41	0.0	0.0	103
261	38.8	3.70	0.0	0.0	0.0	0.0	203
262	76.3	4.90	4.30	0.0	0.0	0.31	103
263	64.0	3.80	0.0	0.0	0.0	0.0	303
264	24.9	3.80	3.25	0.0	0.0	0.0	103
265	72.9	4.20	0.0	0.0	0.0	0.0	303
266	23.4	3.60	3.31	3.42	0.0	0.68	103
267	74.4	4.10	0.0	0.0	0.0	0.0	203
268	36.5	4.10	0.0	0.0	0.0	0.0	203
269	28.4	3.80	0.0	0.0	0.0	0.0	203
270	85.7	4.10	0.0	0.0	0.0	0.0	?
271	32.1	3.80	0.0	0.0	0.0	0.0	203
272	73.9	4.00	0.0	0.0	0.0	0.0	203
273	75.7	3.80	0.0	0.0	0.0	0.0	203
274	24.6	4.00	0.0	0.0	0.0	0.0	203
275	73.4	4.10	0.0	0.0	0.0	0.0	203
276	85.7	3.70	0.0	0.0	0.0	0.0	203
277	27.4	3.70	0.0	0.0	0.0	0.0	203
278	75.8	5.40	0.0	0.0	0.0	0.0	303
279	53.6	3.70	0.0	0.0	0.0	0.0	203
280	71.9	3.70	0.0	0.0	0.0	0.0	203
281	76.4	5.30	0.0	0.0	0.0	0.0	203
282	76.1	3.70	0.0	0.0	0.0	0.0	303
283	61.7	3.70	0.0	0.0	0.0	0.0	203
284	87.3	3.60	0.0	0.0	0.0	0.0	203
285	77.3	3.50	0.0	0.0	0.0	0.0	203
286	32.2	4.50	3.67	3.80	0.0	1.66	103
287	86.7	3.80	0.0	0.0	0.0	0.0	203
288	71.3	3.40	0.0	0.0	0.0	0.0	203
289	74.9	3.60	0.0	0.0	0.0	0.0	203
290	70.0	3.50	0.0	0.0	0.0	0.0	203
291	38.1	4.10	0.0	0.0	0.0	0.0	303
292	32.9	5.20	4.00	3.39	0.0	1.67	103
293	85.6	4.00	0.0	0.0	0.0	0.0	303
294	70.9	5.20	4.51	0.0	4.12	0.74	103
295	85.5	3.90	0.0	0.0	0.0	0.0	203
296	77.5	3.50	0.0	0.0	0.0	0.0	203
297	39.8	5.00	0.0	3.92	0.0	0.90	103
298	61.8	3.60	3.71	0.0	0.0	0.0	103
299	24.3	3.60	3.20	2.53	0.0	0.0	103
300	31.5	4.70	3.48	3.28	0.0	0.29	103
301	31.8	3.70	0.0	0.0	0.0	0.0	203
302	69.9	3.20	0.0	0.0	0.0	0.0	203
303	72.3	3.90	0.0	0.0	0.0	0.0	503
304	31.7	3.60	0.0	0.0	0.0	0.0	203

FBK 01/01/72 - 03/20/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
305	40.7	4.40	0.0	0.0	0.0	0.0	303
307	35.4	4.00	0.0	0.0	0.0	0.0	203
308	82.4	3.40	0.0	3.90	0.0	0.92	103
309	68.6	3.40	0.0	0.0	0.0	0.0	203

APPENDIX II-E

BASIC DATA FOR TLO

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
2	87.7	4.60	0.0	0.0	0.0	0.0	504
3	89.1	4.00	0.0	0.0	0.0	0.0	204
4	90.0	4.00	0.0	0.0	0.0	0.0	504
5	19.3	4.20	0.0	0.0	0.0	0.0	204
6	63.8	5.20	4.13	3.53	3.38	1.83	104
7	87.4	4.80	3.64	0.0	0.0	0.58	104
8	87.0	4.50	0.0	0.0	0.0	0.0	204
9	74.5	3.40	0.0	0.0	0.0	0.0	204
10	83.7	4.30	0.0	0.0	0.0	0.0	204
11	100.0	4.80	0.0	0.0	0.0	0.0	204
12	84.0	4.40	0.0	0.0	0.0	0.0	204
13	100.1	*4.60	4.10	3.72	3.69	2.56	104
14	91.6	3.90	4.08	3.64	0.0	1.09	104
15	63.2	3.80	0.0	0.0	0.0	0.0	204
16	92.4	4.50	0.0	0.0	0.0	0.0	204
17	16.5	4.00	3.17	2.97	0.0	1.24	104
18	58.1	4.50	0.0	0.0	0.0	0.0	204
19	83.4	4.00	4.05	0.0	0.0	0.37	104
20	82.0	3.90	0.0	0.0	0.0	0.0	204
21	56.3	4.70	3.23	0.0	0.0	2.54	104
22	100.1	4.70	0.0	0.0	0.0	0.0	204
23	44.9	5.20	3.42	0.0	0.0	0.0	104
24	57.7	3.90	0.0	0.0	0.0	0.0	304
25	36.2	4.20	0.0	0.0	0.0	0.0	204
26	98.5	4.70	6.31	0.0	0.0	2.01	304
27	97.7	4.60	0.0	0.0	0.0	0.0	304
28	85.2	3.60	0.0	0.0	0.0	0.0	204
29	83.9	4.30	0.0	0.0	0.0	0.0	204
30	91.5	3.80	0.0	0.0	0.0	0.0	204
31	100.2	5.00	4.11	0.0	0.0	0.87	104
32	83.9	4.40	0.0	0.0	0.0	0.0	204
33	85.2	3.90	0.0	0.0	0.0	0.0	204
34	93.1	4.00	0.0	0.0	0.0	0.0	204
35	26.4	4.40	4.12	4.26	4.09	0.94	104
36	22.3	4.90	0.0	3.33	0.0	0.83	104
37	84.0	4.80	4.46	3.78	0.0	0.49	104
38	84.1	4.00	4.25	0.0	3.55	1.00	104
39	75.6	5.30	4.89	0.0	4.78	0.0	104
40	72.6	3.90	0.0	0.0	0.0	0.0	204
41	41.1	5.10	0.0	0.0	0.0	0.0	204
42	88.7	3.90	0.0	0.0	0.0	0.0	204
43	72.3	4.70	0.0	3.68	0.0	1.29	104
44	60.9	5.40	0.0	0.0	0.0	0.0	204
45	62.0	4.60	0.0	0.0	0.0	0.0	204
46	83.9	3.80	0.0	0.0	0.0	0.0	204
47	83.9	3.90	0.0	0.0	0.0	0.0	204
48	24.8	4.10	0.0	0.0	0.0	0.0	504
49	92.1	4.80	0.0	0.0	0.0	0.0	204
50	40.6	4.90	0.0	3.26	3.73	1.75	104

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
2	87.7	4.60	0.0	0.0	0.0	0.0	504
3	89.1	4.00	0.0	0.0	0.0	0.0	204
4	90.0	4.00	0.0	0.0	0.0	0.0	504
5	19.3	4.20	0.0	0.0	0.0	0.0	204
6	63.8	5.20	4.13	3.53	3.38	1.83	104
7	87.4	4.80	3.64	0.0	0.0	0.58	104
8	87.0	4.50	0.0	0.0	0.0	0.0	204
9	74.5	3.40	0.0	0.0	0.0	0.0	204
10	83.7	4.30	0.0	0.0	0.0	0.0	204
11	100.0	4.80	0.0	0.0	0.0	0.0	204
12	84.0	4.40	0.0	0.0	0.0	0.0	204
13	100.1	*4.60	4.10	3.72	3.69	2.56	104
14	91.6	3.90	4.08	3.64	0.0	1.09	104
15	63.2	3.80	0.0	0.0	0.0	0.0	204
16	92.4	4.50	0.0	0.0	0.0	0.0	204
17	16.5	4.00	3.17	2.97	0.0	1.24	104
18	58.1	4.50	0.0	0.0	0.0	0.0	204
19	83.4	4.00	4.05	0.0	0.0	0.37	104
20	82.0	3.90	0.0	0.0	0.0	0.0	204
21	56.3	4.70	3.23	0.0	0.0	2.54	104
22	100.1	4.70	0.0	0.0	0.0	0.0	204
23	44.9	5.20	3.42	0.0	0.0	0.0	104
24	57.7	3.90	0.0	0.0	0.0	0.0	304
25	36.2	4.20	0.0	0.0	0.0	0.0	204
26	98.5	4.70	6.31	0.0	0.0	2.01	304
27	97.7	4.60	0.0	0.0	0.0	0.0	304
28	85.2	3.60	0.0	0.0	0.0	0.0	204
29	83.9	4.30	0.0	0.0	0.0	0.0	204
30	91.5	3.80	0.0	0.0	0.0	0.0	204
31	100.2	5.00	4.11	0.0	0.0	0.87	104
32	83.9	4.40	0.0	0.0	0.0	0.0	204
33	85.2	3.90	0.0	0.0	0.0	0.0	204
34	93.1	4.00	0.0	0.0	0.0	0.0	204
35	26.4	4.40	4.12	4.26	4.09	0.94	104
36	22.3	4.90	0.0	3.33	0.0	0.83	104
37	84.0	4.80	4.46	3.78	0.0	0.49	104
38	84.1	4.00	4.25	0.0	3.55	1.00	104
39	75.6	5.30	4.89	0.0	4.78	0.0	104
40	72.6	3.90	0.0	0.0	0.0	0.0	204
41	41.1	5.10	0.0	0.0	0.0	0.0	204
42	88.7	3.90	0.0	0.0	0.0	0.0	204
43	72.3	4.70	0.0	3.68	0.0	1.29	104
44	60.9	5.40	0.0	0.0	0.0	0.0	204
45	62.0	4.60	0.0	0.0	0.0	0.0	204
46	83.9	3.80	0.0	0.0	0.0	0.0	204
47	83.9	3.90	0.0	0.0	0.0	0.0	204
48	24.8	4.10	0.0	0.0	0.0	0.0	504
49	92.1	4.80	0.0	0.0	0.0	0.0	204
50	40.6	4.90	0.0	3.26	3.73	1.75	104

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
51	10.0	4.10	0.0	0.0	0.0	0.0	204
52	24.5	4.80	3.35	3.41	0.0	0.0	104
53	36.5	3.80	0.0	0.0	0.0	0.0	204
54	87.7	4.20	0.0	0.0	0.0	0.0	204
55	26.4	4.40	0.0	0.0	0.0	0.0	204
56	86.8	4.20	0.0	0.0	0.0	0.0	204
57	83.7	4.00	0.0	0.0	0.0	0.0	304
58	87.1	4.00	0.0	0.0	0.0	0.0	304
59	85.3	4.60	0.0	0.0	0.0	0.0	204
60	13.5	*4.20	0.0	0.0	0.0	0.0	204
61	100.0	4.80	0.0	0.0	0.0	0.0	204
62	100.3	4.60	0.0	0.0	0.0	0.0	204
63	13.5	*3.70	0.0	0.0	0.0	0.0	304
65	83.4	3.80	0.0	0.0	0.0	0.0	204
66	89.5	4.10	0.0	0.0	0.0	0.0	204
67	87.8	3.20	0.0	0.0	0.0	0.0	204
68	24.0	4.00	0.0	0.0	0.0	0.0	204
69	89.5	4.80	0.0	0.0	0.0	0.0	204
70	84.2	3.80	0.0	0.0	0.0	0.0	204
71	83.7	3.80	0.0	3.15	0.0	1.69	104
72	98.4	4.40	0.0	0.0	0.0	0.0	204
73	58.8	5.90	0.0	3.79	0.0	0.0	104
74	50.8	4.00	0.0	0.0	0.0	0.0	204
75	62.3	4.50	0.0	0.0	0.0	0.0	204
76	59.0	4.40	0.0	3.19	0.0	0.0	104
77	87.9	4.00	0.0	0.0	0.0	0.0	204
78	89.3	3.80	0.0	0.0	0.0	0.0	204
79	62.6	4.70	0.0	0.0	0.0	0.0	204
80	54.3	3.90	0.0	0.0	0.0	0.0	204
81	84.6	3.90	3.71	3.27	0.0	4.31	104
82	83.7	4.10	0.0	0.0	0.0	0.0	204
83	79.4	3.60	0.0	0.0	0.0	0.0	204
84	83.7	3.70	0.0	0.0	0.0	0.0	204
85	89.4	3.60	0.0	0.0	0.0	0.0	204
86	88.4	3.60	0.0	0.0	0.0	0.0	204
87	19.5	4.60	3.61	3.45	0.0	1.00	104
88	39.4	5.10	4.42	0.0	3.72	0.87	104
89	86.8	4.50	0.0	4.32	0.0	0.71	104
90	13.5	*4.50	3.17	0.0	0.0	6.58	104
92	13.4	4.80	0.0	0.0	0.0	0.0	204
93	89.8	4.80	0.0	0.0	0.0	0.0	204
94	13.4	4.40	3.79	3.00	2.90	1.27	104
95	70.1	5.20	3.56	0.0	0.0	1.95	604
96	54.4	4.50	0.0	0.0	0.0	0.0	204
97	13.5	*4.10	2.82	0.0	0.0	6.38	104
98	13.5	*4.30	0.0	0.0	0.0	0.0	304
99	13.5	*4.10	0.0	0.0	0.0	0.0	304
100	13.7	3.60	2.78	0.0	0.0	2.86	104
101	13.5	*4.30	0.0	0.0	0.0	0.0	304

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LP RATIO	COMMENT
102	13.7	*3.70	0.0	0.0	0.0	0.0	204
103	13.6	*4.00	0.0	0.0	0.0	0.0	204
104	13.5	*4.30	3.76	2.85	0.0	0.50	104
105	13.5	*4.30	3.87	0.0	0.0	1.24	104
106	13.4	*4.40	3.40	0.0	0.0	2.41	104
107	74.0	4.10	0.0	0.0	0.0	0.0	204
108	62.4	4.70	0.0	0.0	0.0	0.0	204
109	58.9	4.30	0.0	0.0	0.0	0.0	204
110	13.4	*3.80	0.0	0.0	0.0	0.0	304
111	86.8	4.80	0.0	0.0	0.0	0.0	204
112	102.4	5.70	5.14	0.0	4.43	1.28	104
113	13.5	*4.30	0.0	0.0	0.0	0.0	504
114	100.1	4.80	0.0	3.80	0.0	0.99	104
115	45.6	4.30	0.0	0.0	0.0	0.0	204
116	56.5	5.50	0.0	0.0	0.0	0.0	504
117	45.5	4.50	0.0	0.0	0.0	0.0	304
118	45.6	3.90	0.0	0.0	0.0	0.0	204
119	45.6	4.10	0.0	3.62	0.0	0.51	104
120	60.1	4.90	0.0	0.0	0.0	0.0	504
122	86.8	3.90	0.0	0.0	0.0	0.0	204
123	83.4	4.60	0.0	4.09	0.0	0.93	104
124	92.6	3.80	0.0	0.0	0.0	0.0	204
125	22.0	4.50	3.44	3.23	0.0	3.12	104
126	84.5	3.90	0.0	0.0	0.0	0.0	204
278	25.6	5.40	4.71	4.39	0.0	0.52	104
279	88.9	3.70	0.0	0.0	0.0	0.0	204
280	57.2	3.70	0.0	0.0	0.0	0.0	204
281	70.0	5.30	0.0	3.25	0.0	0.0	104
282	26.1	3.70	0.0	0.0	0.0	0.0	304
283	77.9	3.70	0.0	0.0	0.0	0.0	204
284	54.2	3.60	0.0	0.0	0.0	0.0	204
285	58.9	3.50	0.0	0.0	0.0	0.0	204
286	85.6	4.50	0.0	4.45	0.0	1.27	104
287	52.1	3.80	0.0	0.0	0.0	0.0	204
288	65.3	3.40	0.0	0.0	0.0	0.0	504
289	79.5	3.60	0.0	0.0	0.0	0.0	204
290	64.1	3.50	0.0	0.0	0.0	0.0	304
291	94.0	4.10	0.0	0.0	0.0	0.0	304
292	89.4	5.20	0.0	0.0	0.0	0.0	204
293	49.0	4.00	0.0	0.0	0.0	0.0	204
294	54.7	5.20	4.21	0.0	3.45	0.37	104
295	48.7	3.90	0.0	0.0	0.0	0.0	204
296	62.4	3.50	0.0	0.0	0.0	0.0	204
297	88.6	5.00	0.0	0.0	0.0	0.0	304
298	59.1	3.60	0.0	0.0	0.0	0.0	204
299	82.5	3.60	0.0	0.0	0.0	0.0	204
300	88.0	4.70	0.0	0.0	0.0	0.0	204
301	83.5	3.70	0.0	0.0	0.0	0.0	204
302	55.9	3.20	0.0	0.0	0.0	0.0	204

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
303	31.5	3.90	0.0	0.0	0.0	0.0	204
304	89.9	3.60	0.0	0.0	0.0	0.0	204
305	92.2	4.40	0.0	0.0	0.0	0.0	304
306	55.9	3.90	0.0	0.0	0.0	0.0	204
307	91.0	4.00	0.0	0.0	0.0	0.0	204
308	53.0	3.40	3.32	0.0	0.0	2.46	104
309	61.8	3.40	0.0	0.0	0.0	0.0	204
354	58.1	4.50	3.56	3.29	3.06	0.0	104
355	93.9	3.70	0.0	0.0	0.0	0.0	204
356	40.6	4.00	0.0	0.0	0.0	0.0	204
357	86.1	3.30	0.0	0.0	0.0	0.0	304
358	89.6	4.00	0.0	0.0	0.0	0.0	204
359	90.5	4.30	0.0	0.0	0.0	0.0	304
360	92.4	3.70	0.0	0.0	0.0	0.0	204
361	40.5	5.40	4.42	4.35	3.68	3.67	104
362	40.4	5.10	0.0	0.0	0.0	0.0	304
363	86.4	3.70	0.0	0.0	0.0	0.0	304
364	40.5	5.10	3.81	3.70	3.12	0.0	304
365	84.4	3.80	0.0	0.0	0.0	0.0	204
366	42.1	4.70	3.41	3.38	2.74	0.0	304
369	45.7	3.50	0.0	2.66	2.19	0.0	104
370	50.7	3.60	0.0	0.0	0.0	0.0	304
372	13.5	*4.30	3.01	2.97	0.0	0.0	104
373	20.3	4.90	3.66	3.67	0.0	0.0	104
374	85.9	3.50	3.50	3.49	2.03	0.0	104
375	24.8	3.30	2.93	2.98	2.52	0.0	104
376	83.3	4.10	0.0	0.0	0.0	0.0	204
377	56.2	4.50	0.0	0.0	0.0	0.0	304
378	85.7	3.60	0.0	0.0	0.0	0.0	204
379	39.9	3.70	0.0	0.0	0.0	0.0	304
380	15.7	*4.30	2.78	0.0	0.0	0.0	104
381	92.5	4.60	0.0	3.54	0.0	0.0	304
382	67.5	4.30	3.44	3.36	2.68	0.0	104
383	90.0	3.90	0.0	0.0	0.0	0.0	304
384	57.0	4.30	0.0	0.0	0.0	0.0	204
385	26.9	4.40	2.60	2.54	0.0	0.0	104
386	85.5	5.00	0.0	0.0	0.0	0.0	304
387	93.5	4.00	0.0	0.0	0.0	0.0	204
388	93.5	4.50	3.54	3.13	2.90	3.34	104
389	90.5	4.10	0.0	0.0	0.0	0.0	204
403	59.8	3.70	0.0	0.0	0.0	0.0	204
404	48.7	3.50	0.0	0.0	0.0	0.0	304
405	16.0	*4.50	3.28	2.63	2.38	5.49	104
408	58.2	3.40	0.0	0.0	0.0	0.0	204
409	15.3	*3.70	0.0	0.0	0.0	0.0	204
410	56.4	4.70	3.60	3.49	3.21	0.0	104
411	85.1	4.10	0.0	0.0	0.0	0.0	204
412	100.0	5.00	4.00	3.80	3.16	0.0	104
413	92.9	3.60	0.0	0.0	0.0	0.0	304

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
414	56.1	3.70	0.0	0.0	0.0	0.0	204
415	52.3	4.00	3.03	3.08	2.68	0.0	304
416	60.1	5.50	3.66	3.40	3.32	0.0	304
417	85.0	3.80	0.0	0.0	0.0	0.0	304
418	81.0	4.40	0.0	0.0	0.0	0.0	204
419	60.1	*5.20	3.27	3.18	2.73	0.0	104
420	36.7	3.50	0.0	0.0	0.0	0.0	204
424	83.7	4.20	0.0	0.0	0.0	0.0	204
425	84.6	3.40	0.0	0.0	0.0	0.0	304
426	28.8	4.30	0.0	0.0	0.0	0.0	204
428	86.2	3.90	0.0	0.0	0.0	0.0	204
429	47.0	3.90	0.0	0.0	0.0	0.0	304
430	49.4	3.70	0.0	0.0	0.0	0.0	204
431	56.4	*4.60	0.0	0.0	0.0	0.0	204
432	51.3	4.40	0.0	0.0	0.0	0.0	304
433	98.0	4.90	4.38	4.00	3.42	1.03	104
435	85.7	3.40	0.0	0.0	0.0	0.0	204
436	45.2	5.40	4.83	4.42	4.06	1.22	104
437	45.3	4.60	0.0	0.0	0.0	0.0	304
438	45.2	5.00	3.67	3.33	3.00	0.0	104
439	57.5	4.30	0.0	0.0	0.0	0.0	304
440	47.0	4.00	0.0	0.0	0.0	0.0	204
441	42.2	4.00	0.0	0.0	0.0	0.0	304
442	45.4	5.10	0.0	0.0	0.0	0.0	304
443	89.4	4.00	0.0	0.0	0.0	0.0	204
444	28.0	3.40	0.0	0.0	0.0	0.0	204
445	48.7	3.90	0.0	0.0	0.0	0.0	304
446	84.5	4.40	0.0	0.0	0.0	0.0	504
447	88.4	3.60	0.0	0.0	0.0	0.0	204
448	48.7	3.80	0.0	0.0	0.0	0.0	204
449	60.2	4.60	3.94	3.60	2.91	0.64	104
450	63.6	3.50	0.0	0.0	0.0	0.0	304
451	65.0	4.30	0.0	0.0	0.0	0.0	304
452	43.3	3.40	0.0	0.0	0.0	0.0	304
453	45.7	4.00	0.0	0.0	0.0	0.0	204
454	20.2	4.70	0.0	0.0	0.0	0.0	304
455	47.7	4.10	0.0	0.0	0.0	0.0	304
456	56.1	4.40	3.17	2.99	0.0	0.0	104
457	50.0	3.10	0.0	0.0	0.0	0.0	204
458	59.4	4.30	0.0	0.0	0.0	0.0	304
459	91.9	3.90	0.0	0.0	0.0	0.0	304
460	83.5	3.70	0.0	0.0	0.0	0.0	304
461	85.8	5.00	4.67	4.45	3.81	0.0	104
462	80.8	3.70	0.0	0.0	0.0	0.0	204
463	20.9	4.70	0.0	0.0	0.0	0.0	204
464	91.9	4.90	4.07	0.0	0.0	0.0	104
465	89.4	4.20	0.0	0.0	0.0	0.0	204
466	18.5	4.00	0.0	2.55	0.0	0.0	104
467	100.1	4.10	0.0	0.0	0.0	0.0	204

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
468	97.6	3.80	C.C	0.0	0.0	0.0	204
469	85.7	4.10	C.0	0.0	0.0	0.0	204
470	65.5	4.70	0.0	0.0	0.0	0.0	504
471	57.7	4.20	C.C	0.0	0.0	0.0	304
472	89.7	5.20	3.96	3.89	3.33	1.53	104
473	84.5	3.60	C.0	0.0	0.0	0.0	204
474	51.3	3.70	C.C	0.0	0.0	0.0	204
475	38.9	4.70	3.91	3.23	2.67	3.00	104
476	89.0	5.20	4.12	3.78	3.20	0.0	104
477	60.4	3.50	C.0	0.0	0.0	0.0	204
478	84.9	4.CC	C.C	0.0	0.0	0.0	204
479	20.4	4.10	3.29	2.59	0.0	0.0	104
480	89.0	3.7C	C.C	0.0	0.0	0.0	204
481	72.8	3.9C	C.C	0.0	0.0	0.0	204
482	92.9	4.20	0.C	0.0	0.0	0.0	204
483	55.6	3.70	0.C	0.0	0.0	0.0	204
484	13.5	4.4C	C.C	0.0	0.0	0.0	204
485	100.9	3.8C	C.C	0.0	0.0	0.0	204
486	27.7	3.9C	0.0	0.0	0.0	0.0	204
487	45.2	4.40	0.C	0.0	0.0	0.0	204
488	45.4	3.90	C.C	0.0	0.0	0.0	204
489	45.4	3.40	0.0	0.0	0.0	0.0	204
490	99.1	3.9C	0.C	0.0	0.0	0.0	204
491	59.C	3.80	0.0	0.0	0.0	0.0	204
492	100.3	5.10	4.09	3.77	3.19	1.37	104
493	90.5	4.40	3.12	3.03	2.79	0.0	104
494	85.7	3.70	C.C	0.0	0.0	0.0	204
495	90.8	3.50	C.0	0.0	0.0	0.0	204
496	76.5	5.20	4.75	4.21	3.80	0.0	104
497	36.3	4.90	4.43	4.31	3.97	2.05	104
498	76.4	4.70	C.C	0.0	0.0	0.0	204
499	98.6	4.60	3.57	3.43	2.75	0.93	104
500	92.9	3.70	C.C	0.0	0.0	0.0	204
501	85.1	4.2C	0.C	0.0	0.0	0.0	204
502	83.5	3.90	C.C	0.0	0.0	0.0	304
503	87.8	4.20	C.0	3.13	0.0	0.0	104
504	27.6	3.90	0.C	0.0	0.0	0.0	204
505	84.1	5.30	C.C	3.74	3.16	2.26	104
506	82.4	3.3C	C.0	0.0	0.0	0.0	204
508	93.6	4.10	3.87	3.67	2.73	0.0	104
509	84.0	4.50	C.C	0.0	0.0	0.0	204
510	60.2	4.00	C.C	0.0	0.0	0.0	304
511	48.5	3.7C	C.C	0.0	0.0	0.0	204
513	91.5	5.00	4.07	3.82	3.15	0.0	104
514	87.3	4.20	0.0	0.0	0.0	0.0	204
515	82.8	4.30	0.C	0.0	0.0	0.0	204
516	55.9	3.60	0.0	0.0	0.0	0.0	304
517	76.0	3.9C	C.C	0.0	0.0	0.0	204
518	45.9	4.30	C.0	0.0	0.0	0.0	304

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
521	30.3	4.60	0.0	3.39	2.98	0.0	104
522	74.3	5.50	5.11	4.86	3.87	0.0	104
523	72.4	4.70	0.0	0.0	0.0	0.0	204
524	23.5	3.90	0.0	0.0	0.0	0.0	204
525	74.2	3.60	0.0	0.0	0.0	0.0	204
526	81.1	3.70	0.0	0.0	0.0	0.0	304
527	33.6	4.40	2.99	3.09	0.0	0.0	104
528	81.4	4.00	0.0	0.0	0.0	0.0	204
529	64.3	4.80	0.0	0.0	0.0	0.0	204
530	19.6	4.50	3.55	3.24	0.0	0.0	104
537	25.9	3.80	0.0	0.0	0.0	0.0	204
538	57.3	3.80	0.0	0.0	0.0	0.0	204
539	89.2	4.80	0.0	0.0	0.0	0.0	204
540	21.6	4.40	0.0	0.0	0.0	0.0	304
541	89.2	5.10	0.0	0.0	0.0	0.0	304
542	54.6	4.00	0.0	0.0	0.0	0.0	204
543	100.5	4.90	0.0	0.0	0.0	0.0	304
544	81.5	3.50	0.0	0.0	0.0	0.0	204
545	23.5	3.60	0.0	0.0	0.0	0.0	204
546	83.3	4.80	0.0	0.0	0.0	0.0	204
547	98.7	4.60	0.0	0.0	0.0	0.0	204
548	45.7	3.60	0.0	0.0	0.0	0.0	204
549	98.6	3.70	0.0	0.0	0.0	0.0	304
550	105.6	4.10	0.0	0.0	0.0	0.0	234
551	29.6	3.70	0.0	0.0	0.0	0.0	204
552	57.5	3.70	0.0	0.0	0.0	0.0	204
553	58.2	3.80	0.0	0.0	0.0	0.0	204
554	31.1	4.50	0.0	3.05	3.06	1.25	104
555	22.7	0.0	0.0	0.0	0.0	0.0	104
556	92.8	4.00	0.0	0.0	0.0	0.0	204
557	50.9	4.70	0.0	3.84	0.0	0.0	134
558	83.4	5.60	5.11	4.63	4.12	0.0	104
559	83.4	5.00	5.41	4.88	0.0	0.0	134
560	51.0	4.20	0.0	0.0	0.0	0.0	234
561	28.3	4.30	3.41	3.04	0.0	2.32	104
562	90.8	4.50	0.0	0.0	0.0	0.0	204
563	83.4	4.00	0.0	0.0	0.0	0.0	304
564	27.4	3.90	0.0	0.0	0.0	0.0	304
565	80.1	5.30	4.22	3.84	3.49	0.0	104
566	28.5	4.50	4.13	3.59	0.0	0.0	104
567	101.2	4.80	0.0	0.0	0.0	0.0	204
568	101.2	4.00	0.0	0.0	0.0	0.0	204
569	90.3	4.00	0.0	0.0	0.0	0.0	204
570	28.6	4.30	0.0	3.06	2.67	0.0	104
571	51.0	4.00	3.01	2.63	0.0	0.0	104
572	90.2	3.90	0.0	0.0	0.0	0.0	304
573	89.2	5.70	6.24	5.44	5.42	0.73	104
574	89.4	4.40	0.0	0.0	0.0	0.0	304
575	89.6	3.80	0.0	0.0	0.0	0.0	204

TID 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LP RATIO	COMMENT
576	47.8	4.30	C.C	0.0	0.0	0.0	304
577	89.6	4.10	0.0	0.0	0.0	0.0	304
578	89.5	4.70	0.0	0.0	0.0	0.0	204
579	89.4	4.90	C.C	0.0	0.0	0.0	204
580	89.4	4.30	C.0	0.0	0.0	0.0	304
581	33.4	3.80	C.C	0.0	0.0	0.0	204
582	22.3	4.50	3.17	2.89	2.70	0.0	104
583	55.7	5.50	0.0	4.19	4.18	0.90	104
584	55.2	5.00	C.0	0.0	0.0	0.0	204
585	26.9	4.00	0.C	0.0	0.0	0.0	234
586	43.9	5.00	0.0	0.0	0.0	0.0	304
587	24.6	4.00	C.0	0.0	0.0	0.0	204
588	89.6	4.20	0.0	0.0	0.0	0.0	234
589	89.5	4.20	0.0	0.0	0.0	0.0	304
590	84.6	3.70	C.0	0.0	0.0	0.0	204
591	84.5	4.50	C.0	0.0	0.0	0.0	204
592	27.9	4.00	2.97	2.50	0.0	0.0	104
593	86.9	3.90	0.0	0.0	0.0	0.0	304
594	44.0	4.70	0.0	0.0	0.0	0.0	304
595	56.6	4.20	0.0	0.0	0.0	0.0	204
596	90.5	5.10	0.0	3.77	3.23	0.0	104
597	83.9	3.80	C.C	0.0	0.0	0.0	204
598	55.7	5.50	0.C	4.04	3.58	1.00	104
599	83.8	3.70	0.0	0.0	0.0	0.0	204
600	19.0	4.30	C.C	0.0	2.63	0.0	134
601	28.4	4.40	3.07	0.0	2.38	0.0	104
602	88.8	4.10	C.C	0.0	0.0	0.0	204
603	77.2	3.80	C.0	0.0	0.0	0.0	204
604	55.9	4.50	C.C	0.0	0.0	0.0	304
605	70.0	5.10	4.26	3.60	3.11	0.85	104
606	75.0	4.80	4.48	0.0	3.44	0.0	104
607	90.8	4.10	C.C	0.0	0.0	0.0	204
608	108.5	4.50	4.31	4.16	3.99	0.0	104
609	84.8	3.50	C.C	0.0	0.0	0.0	204
610	75.0	5.20	4.07	4.02	0.0	0.0	104
611	72.5	5.00	4.37	3.90	3.64	0.66	104
612	13.7	4.00	3.01	2.55	0.0	0.0	104
613	83.6	3.30	C.0	0.0	0.0	0.0	204
614	84.7	5.30	4.18	4.25	3.57	2.86	104
615	45.7	3.50	C.C	0.0	0.0	0.0	234
616	56.1	3.90	C.C	0.0	0.0	0.0	204
617	20.3	*4.40	0.0	3.10	0.0	0.0	154
618	74.3	4.10	C.C	0.0	0.0	0.0	204
619	57.4	4.70	C.C	0.0	0.0	0.0	204
620	89.6	3.60	C.0	0.0	0.0	0.0	324
621	89.0	3.60	0.0	0.0	0.0	0.0	304
622	90.5	3.60	C.C	0.0	0.0	0.0	304
623	85.1	3.60	0.0	0.0	0.0	0.0	204
624	90.3	4.10	C.C	0.0	0.0	0.0	304

APPENDIX II-F
BASIC DATA FOR EIL

FIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
262	32.6	4.90	0.0	0.0	0.0	0.0	505
263	27.3	3.80	0.0	0.0	0.0	0.0	505
264	85.0	3.80	0.0	0.0	0.0	0.0	505
265	30.6	4.20	0.0	0.0	0.0	0.0	505
266	63.2	3.60	0.0	0.0	0.0	0.0	505
267	35.3	4.10	0.0	0.0	0.0	0.0	505
268	88.1	4.10	0.0	0.0	0.0	0.0	505
269	80.9	3.80	0.0	0.0	0.0	0.0	505
270	19.0	4.10	1.83	1.61	0.0	0.0	155
271	86.9	3.90	0.0	0.0	0.0	0.0	205
272	30.5	4.00	0.0	0.0	0.0	0.0	305
273	12.4	3.80	1.33	1.13	0.0	0.0	155
274	85.9	4.00	0.0	0.0	0.0	0.0	505
275	41.1	4.10	0.0	0.0	0.0	0.0	505
276	55.5	3.70	0.0	0.0	0.0	0.0	305
277	67.2	3.70	0.0	0.0	0.0	0.0	205
278	10.8	5.40	1.63	1.63	0.0	0.0	155
279	73.1	3.70	0.0	0.0	0.0	0.0	205
280	32.4	3.70	0.0	2.35	0.0	0.0	155
281	43.0	5.30	0.0	0.0	0.0	0.0	205
282	10.4	3.70	1.61	1.64	0.0	0.0	155
283	57.7	3.70	0.0	0.0	0.0	0.0	205
284	19.1	3.60	2.61	2.80	0.0	0.0	155
285	31.3	3.50	2.29	2.01	0.0	0.0	155
286	82.0	4.50	3.07	2.64	0.0	0.0	155
287	20.7	3.80	1.95	2.02	0.0	0.0	155
288	40.5	3.40	0.0	0.0	0.0	0.0	205
289	53.2	3.60	0.0	0.0	0.0	0.0	205
290	40.0	3.50	3.74	3.55	0.0	0.0	155
291	112.2	4.10	0.0	0.0	0.0	0.0	305
294	30.6	5.20	3.36	3.21	0.0	0.0	155
295	17.1	3.90	2.19	1.54	0.0	0.0	155
296	34.7	3.50	2.23	2.27	0.0	0.0	155
297	80.7	5.00	0.0	0.0	0.0	0.0	305
298	39.8	3.60	0.0	0.0	0.0	0.0	205
299	83.4	3.60	0.0	0.0	0.0	0.0	205
300	85.7	4.70	0.0	0.0	0.0	0.0	205
301	79.9	3.70	0.0	0.0	0.0	0.0	205
302	32.5	3.20	0.0	0.0	0.0	0.0	205
310	85.6	3.90	0.0	0.0	0.0	0.0	205
311	34.6	3.60	3.65	0.0	0.0	0.0	105
312	55.2	3.70	3.62	0.0	3.28	0.0	105
313	13.0	4.10	0.0	0.0	0.0	0.0	205
314	85.1	3.90	0.0	0.0	0.0	0.0	305
315	16.0	4.10	3.03	2.70	0.0	0.0	105
316	83.3	3.90	0.0	0.0	0.0	0.0	505
317	40.0	3.90	0.0	0.0	0.0	0.0	305
318	40.0	3.70	0.0	0.0	0.0	0.0	205
319	39.4	3.50	0.0	3.64	3.29	0.0	105

FIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
320	39.3	3.50	C.C	0.0	0.0	0.0	205
321	48.1	3.70	C.C	0.0	0.0	0.0	505
322	53.1	4.30	C.C	0.0	0.0	0.0	505
323	79.5	*5.00	C.C	0.0	0.0	0.0	505
324	16.1	4.20	C.C	0.0	0.0	0.0	505
325	16.9	4.20	C.C	0.0	0.0	0.0	205
326	84.2	4.00	C.C	0.0	0.0	0.0	205
327	88.6	3.40	C.C	0.0	0.0	0.0	205
328	86.3	3.50	0.C	0.0	0.0	0.0	205
330	52.8	3.5C	3.83	3.21	0.0	0.0	105
331	84.0	4.00	0.0	0.0	0.0	0.0	305
332	13.8	4.20	C.0	0.0	0.0	0.0	205
333	10.8	3.5C	C.C	2.60	0.0	0.0	105
334	31.0	4.8C	C.C	0.0	0.0	0.0	205
335	57.2	4.00	C.C	0.0	0.0	0.0	505
336	84.8	3.40	C.C	0.0	0.0	0.0	505
337	85.4	3.60	C.C	0.0	0.0	0.0	305
338	84.5	4.70	0.0	0.0	0.0	0.0	305
339	38.6	5.5C	C.0	0.0	0.0	0.0	205
340	85.2	3.80	C.C	0.0	0.0	0.0	205
341	76.2	5.50	C.C	0.0	0.0	0.0	205
343	76.3	4.90	4.26	4.00	3.91	0.0	105
344	14.0	4.10	C.C	0.0	0.0	0.0	205
345	54.7	4.3C	C.C	0.0	0.0	0.0	305
346	76.4	4.7C	3.24	3.16	0.0	0.0	105
347	17.2	4.50	C.C	0.0	0.0	0.0	305
348	49.8	4.7C	C.0	0.0	0.0	0.0	205
349	85.7	4.4C	0.0	0.0	0.0	0.0	205
350	8.7	4.9O	2.66	0.0	1.75	0.0	105
351	139.6	4.9O	C.C	0.0	0.0	0.0	205
352	11.0	4.0C	C.0	0.0	0.0	0.0	205
353	14.3	3.60	C.C	0.0	0.0	0.0	205
354	28.0	4.5C	C.0	0.0	0.0	0.0	205
355	86.6	3.7C	C.C	0.0	0.0	0.0	205
356	10.7	4.00	C.C	0.0	0.0	0.0	305
361	10.7	5.4C	5.03	4.47	4.30	0.0	105
362	10.7	5.10	C.C	0.0	0.0	0.0	305
363	85.9	3.70	C.C	0.0	0.0	0.0	205
365	84.4	3.80	0.C	0.0	0.0	0.0	205
428	85.4	3.9C	C.C	0.0	0.0	0.0	205
432	19.7	4.40	3.94	3.28	2.71	0.0	105
433	75.6	4.9C	3.87	3.87	3.10	0.0	105
435	86.7	3.40	0.C	0.0	0.0	0.0	205
437	14.1	4.60	3.62	3.19	2.77	0.0	105
438	14.1	5.00	3.74	3.37	3.02	0.0	105
439	31.3	4.30	0.C	0.0	0.0	0.0	205
441	11.9	4.0C	3.48	2.72	2.49	0.0	105
442	14.3	5.1C	3.86	3.71	3.36	0.0	105
443	85.9	4.00	C.C	0.0	0.0	0.0	205

FII 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
444	11.7	3.40	0.0	0.0	0.0	0.0	205
445	17.1	3.90	0.0	0.0	0.0	0.0	305
446	84.8	4.40	0.0	0.0	0.0	0.0	205
447	83.4	3.60	0.0	0.0	0.0	0.0	205
449	39.6	4.60	3.57	3.13	0.0	0.0	105
450	43.0	3.50	0.0	0.0	0.0	0.0	205
451	44.4	4.30	0.0	0.0	0.0	0.0	305
452	13.7	3.40	3.67	2.97	0.0	0.0	105
453	15.2	4.00	3.27	2.91	0.0	0.0	105
454	13.3	4.70	3.10	2.54	2.02	0.0	105
455	16.9	4.10	0.0	0.0	0.0	0.0	305
456	38.5	4.40	0.0	0.0	0.0	0.0	305
457	18.2	3.10	2.70	2.52	0.0	0.0	105
458	49.3	4.30	3.67	3.37	0.0	0.0	105
459	83.6	3.90	0.0	0.0	0.0	0.0	305
460	84.1	3.70	0.0	0.0	0.0	0.0	205
461	57.6	5.00	4.59	4.36	3.83	0.0	105
462	57.1	3.70	0.0	0.0	0.0	0.0	205
463	15.1	4.70	0.0	0.0	0.0	0.0	205
464	87.1	4.90	3.96	3.58	0.0	0.0	105
465	84.0	4.20	0.0	0.0	0.0	0.0	205
466	14.7	4.00	0.0	0.0	0.0	0.0	205
467	81.5	4.10	0.0	0.0	0.0	0.0	205
469	85.3	4.10	0.0	0.0	0.0	0.0	305
470	44.9	4.70	0.0	0.0	0.0	0.0	305
471	32.1	4.20	0.0	0.0	0.0	0.0	305
472	85.6	5.20	0.0	0.0	0.0	0.0	305
473	84.8	3.60	0.0	0.0	0.0	0.0	305
474	22.0	3.70	0.0	0.0	0.0	0.0	505
475	11.6	4.70	0.0	0.0	0.0	0.0	205
476	85.4	5.20	0.0	0.0	0.0	0.0	205
477	32.9	3.50	0.0	0.0	0.0	0.0	305
478	86.7	4.00	0.0	0.0	0.0	0.0	205
479	13.2	4.10	0.0	0.0	0.0	0.0	205
481	46.6	3.90	0.0	0.0	0.0	0.0	205
482	85.9	4.20	0.0	0.0	0.0	0.0	205
483	24.9	3.70	0.0	0.0	0.0	0.0	205
484	22.2	4.40	0.0	0.0	0.0	0.0	205
485	78.2	3.90	0.0	0.0	0.0	0.0	205
486	7.3	3.90	0.0	0.0	0.0	0.0	205
487	14.1	4.40	0.0	0.0	0.0	0.0	205
488	14.3	3.90	0.0	0.0	0.0	0.0	205
489	14.3	3.40	0.0	0.0	0.0	0.0	205
490	81.6	3.90	0.0	0.0	0.0	0.0	305
491	37.2	3.80	0.0	0.0	0.0	0.0	205
492	78.9	5.10	0.0	0.0	0.0	0.0	505
499	76.0	4.60	3.74	3.28	2.80	0.0	105
500	85.9	3.70	0.0	0.0	0.0	0.0	205
501	85.2	4.20	0.0	0.0	0.0	0.0	205

EIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
502	57.8	3.90	0.0	0.0	0.0	0.0	505
503	85.5	4.20	0.0	0.0	0.0	0.0	305
504	6.1	3.90	0.0	0.0	0.0	0.0	205
505	83.5	5.30	4.70	4.10	3.93	0.0	105
506	83.0	3.30	0.0	0.0	0.0	0.0	205
508	86.0	4.10	0.0	0.0	0.0	0.0	305
509	83.3	4.50	0.0	0.0	0.0	0.0	305
510	36.1	4.00	0.0	0.0	0.0	0.0	205
511	31.9	3.70	0.0	0.0	0.0	0.0	205
512	21.1	4.00	0.0	0.0	0.0	0.0	205
513	84.2	5.00	0.0	0.0	0.0	0.0	305
514	86.6	4.20	0.0	0.0	0.0	0.0	205
515	81.7	4.30	0.0	0.0	0.0	0.0	505
516	30.6	3.60	0.0	0.0	0.0	0.0	205
517	49.1	3.90	3.83	3.40	0.0	0.0	105
518	18.4	4.30	0.0	0.0	0.0	0.0	205
521	15.7	4.60	3.42	3.06	0.0	0.0	105
522	48.6	5.50	4.79	4.50	3.87	0.0	105
523	48.5	4.70	0.0	0.0	0.0	0.0	205
524	9.7	3.90	0.0	0.0	0.0	0.0	205
525	48.3	3.60	0.0	0.0	0.0	0.0	205
526	81.1	3.70	0.0	0.0	0.0	0.0	205
527	11.1	4.40	0.0	0.0	0.0	0.0	205
528	82.3	4.00	0.0	0.0	0.0	0.0	205
529	39.0	4.80	0.0	0.0	0.0	0.0	205
530	14.3	4.50	0.0	0.0	0.0	0.0	205
531	85.6	4.30	0.0	0.0	0.0	0.0	205
532	14.8	4.00	0.0	0.0	0.0	0.0	505
533	22.1	4.40	0.0	0.0	0.0	0.0	305
534	86.7	5.10	0.0	0.0	0.0	0.0	205
535	82.6	5.10	0.0	0.0	0.0	0.0	505
536	39.3	4.30	0.0	0.0	0.0	0.0	505
542	31.0	4.00	0.0	0.0	0.0	0.0	205
543	77.1	4.90	0.0	0.0	0.0	0.0	305
544	56.9	3.50	0.0	0.0	0.0	0.0	305
545	13.2	3.60	0.0	0.0	0.0	0.0	205
546	83.9	4.80	0.0	0.0	0.0	0.0	505
547	76.2	4.60	0.0	0.0	0.0	0.0	205
548	15.2	3.60	0.0	0.0	0.0	0.0	205
549	80.8	3.70	0.0	0.0	0.0	0.0	305
551	4.3	3.70	0.0	0.0	0.0	0.0	205
553	32.0	3.80	0.0	2.71	0.0	3.98	105
554	5.7	4.50	3.66	3.56	2.97	0.0	105
555	10.6	3.40	3.44	3.10	0.0	0.0	105
556	84.4	4.00	0.0	0.0	0.0	0.0	205
557	19.7	4.70	0.0	4.00	0.0	0.0	105
558	84.1	5.60	4.64	0.0	4.74	0.0	105
559	84.1	5.00	5.37	4.57	0.0	0.0	105
560	19.7	4.20	0.0	0.0	0.0	0.0	305

FIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
561	8.6	4.30	3.57	0.0	0.0	0.0	105
562	85.6	4.50	0.0	3.69	0.0	0.0	105
563	83.7	4.00	0.0	0.0	0.0	0.0	205
564	10.9	3.90	3.51	0.0	0.0	0.0	105
565	81.6	5.30	4.99	4.74	4.05	0.17	105
566	8.5	4.50	3.32	0.0	0.0	0.0	105
567	19.7	4.80	0.0	0.0	0.0	0.0	505
568	83.3	4.00	0.0	0.0	0.0	0.0	205
569	84.6	4.00	0.0	0.0	0.0	0.0	205
570	8.7	4.30	0.0	3.80	3.06	0.0	105
571	19.7	4.00	0.0	0.0	0.0	0.0	505
572	86.1	3.90	0.0	0.0	0.0	0.0	305
573	85.8	5.70	0.0	0.0	0.0	0.0	505
574	86.0	4.40	0.0	0.0	0.0	0.0	305
575	86.4	3.80	0.0	0.0	0.0	0.0	205
576	16.2	4.30	0.0	0.0	0.0	0.0	205
577	86.4	4.10	0.0	0.0	0.0	0.0	205
578	86.1	4.70	0.0	0.0	0.0	0.0	205
579	86.0	4.90	0.0	0.0	0.0	0.0	305
580	85.9	4.30	0.0	0.0	0.0	0.0	305
581	89.2	3.80	0.0	0.0	0.0	0.0	205
582	15.4	4.50	0.0	3.56	3.15	0.0	105
583	24.0	5.50	3.89	3.73	3.13	0.0	105
584	23.6	5.00	0.0	0.0	0.0	0.0	205
585	6.6	4.00	0.0	2.91	0.0	0.0	105
586	13.6	5.00	3.81	3.31	3.04	1.29	105
587	9.2	4.00	0.0	0.0	0.0	0.0	205
588	86.4	4.20	0.0	0.0	0.0	0.0	205
589	86.1	4.20	4.70	3.97	0.0	0.0	135
590	85.2	3.70	0.0	0.0	0.0	0.0	205
591	85.8	4.50	3.99	3.82	3.66	0.0	105
592	8.9	4.00	0.0	2.40	2.72	0.0	105
593	88.3	3.90	0.0	0.0	0.0	0.0	305
594	16.7	4.70	3.88	3.72	0.0	0.49	105
595	25.4	4.20	0.0	0.0	0.0	0.0	205
596	87.1	5.10	0.0	0.0	0.0	0.0	205
597	82.8	3.80	0.0	0.0	0.0	0.0	205
598	24.0	5.50	0.0	3.54	3.26	2.03	105
599	85.2	3.70	0.0	0.0	0.0	0.0	205
600	15.3	4.30	0.0	0.0	0.0	0.0	305
601	9.8	4.40	4.15	0.0	3.15	0.0	105
602	84.8	4.10	0.0	0.0	0.0	0.0	205
603	64.6	3.80	0.0	0.0	0.0	0.0	205
604	32.5	4.50	0.0	0.0	0.0	0.0	235
605	57.0	5.10	4.27	4.14	0.0	0.22	105
606	67.2	4.80	5.15	0.0	4.47	0.18	105
607	85.7	4.10	0.0	0.0	0.0	0.0	205
608	54.6	4.50	0.0	0.0	0.0	0.0	205
609	86.0	3.50	0.0	0.0	0.0	0.0	205

FIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
610	50.1	5.20	4.03	3.88	3.51	1.10	105
611	54.4	5.00	4.24	4.20	3.84	0.46	105
612	20.4	4.00	0.0	0.0	0.0	0.0	205
613	84.5	3.30	0.0	0.0	0.0	0.0	205
614	84.6	5.30	4.27	3.79	0.0	0.0	135
615	15.2	3.50	0.0	0.0	0.0	0.0	205
616	29.6	3.90	0.0	0.0	0.0	0.0	205
617	15.2	*4.40	0.0	3.85	0.0	0.0	105
618	49.5	4.10	0.0	0.0	0.0	0.0	205
619	31.6	4.70	0.0	0.0	0.0	0.0	205
620	86.4	3.60	0.0	0.0	0.0	0.0	205
621	84.9	3.60	0.0	0.0	0.0	0.0	205
622	85.2	3.60	0.0	0.0	0.0	0.0	305
623	84.3	3.60	0.0	0.0	0.0	0.0	305
624	84.6	4.10	0.0	0.0	0.0	0.0	205
625	85.2	3.40	0.0	0.0	0.0	0.0	205
626	38.6	5.20	0.0	0.0	0.0	0.0	235
627	13.9	3.50	3.47	2.79	0.0	0.0	105
628	85.2	3.60	0.0	0.0	0.0	0.0	205
629	31.3	3.60	3.15	2.59	0.0	0.0	105
630	85.8	4.30	0.0	3.86	3.78	0.0	105
631	84.9	3.50	0.0	0.0	0.0	0.0	305
632	84.8	4.50	0.0	0.0	0.0	0.0	205
633	84.1	3.60	0.0	0.0	0.0	0.0	205
634	37.5	5.00	0.0	0.0	0.0	0.0	305
635	85.4	4.50	0.0	0.0	0.0	0.0	205
636	85.3	3.50	0.0	0.0	0.0	0.0	305
637	85.0	3.60	0.0	0.0	0.0	0.0	205
638	84.8	3.50	0.0	0.0	0.0	0.0	205
639	14.8	3.60	0.0	0.0	0.0	0.0	205
640	26.5	3.90	0.0	0.0	0.0	0.0	105
641	26.5	3.90	3.55	3.27	0.0	0.0	105
642	52.7	4.00	0.0	0.0	0.0	0.0	505
643	84.8	4.00	0.0	3.76	0.0	0.0	105
644	85.0	5.10	0.0	0.0	4.16	0.0	155
645	83.8	5.10	0.0	0.0	0.0	0.0	205
646	83.8	3.70	0.0	0.0	0.0	0.0	205
647	53.5	3.90	0.0	0.0	0.0	0.0	505
648	12.9	3.60	0.0	0.0	0.0	0.0	205
649	84.6	4.30	0.0	3.85	0.0	1.03	105
650	84.8	3.50	0.0	0.0	0.0	0.0	235
651	85.3	4.90	0.0	0.0	0.0	0.0	305
652	22.7	5.70	0.0	0.0	3.55	0.0	175
653	86.9	5.20	4.28	4.53	4.35	0.0	105
654	83.6	4.50	0.0	0.0	0.0	0.0	305
655	84.6	4.00	0.0	4.07	3.88	0.0	175
656	61.0	4.80	0.0	3.22	0.0	4.46	105
657	53.5	4.30	0.0	0.0	0.0	0.0	205
658	46.7	*4.50	0.0	0.0	0.0	0.0	205

FIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
659	9.9	4.00	C.C	0.0	0.0	0.0	205
660	85.7	4.10	0.0	0.0	0.0	0.0	205
661	85.5	5.20	4.30	4.43	3.91	0.0	105
662	37.7	4.60	C.C	0.0	0.0	0.0	205
663	76.1	4.20	C.C	0.0	0.0	0.0	305
664	85.9	3.70	C.C	0.0	0.0	0.0	305
665	10.7	4.00	0.0	2.68	0.0	0.0	105
666	85.1	3.30	C.C	0.0	0.0	0.0	205
667	86.7	3.80	0.0	0.0	0.0	0.0	205
668	85.0	3.80	C.0	0.0	0.0	0.0	205
669	81.9	3.80	C.C	0.0	0.0	0.0	235
670	66.6	4.00	0.C	0.0	0.0	0.0	205
671	85.2	3.60	C.C	0.0	0.0	0.0	205
672	38.4	5.50	C.0	0.0	0.0	0.0	205
673	56.3	3.80	0.0	0.0	0.0	0.0	205
674	9.2	3.60	0.0	0.0	0.0	0.0	205
675	60.1	4.00	C.C	0.0	0.0	0.0	305
676	59.1	4.80	0.C	0.0	0.0	0.0	305
677	30.4	3.60	C.0	0.0	0.0	0.0	205
678	84.1	4.20	4.17	0.0	0.0	0.0	165
679	45.3	6.30	4.48	4.15	3.77	0.0	105
680	25.6	5.20	0.0	0.0	0.0	0.0	205
681	85.4	3.70	C.0	0.0	0.0	0.0	205
682	12.1	3.70	C.C	2.75	0.0	0.0	105
683	7.4	4.40	C.C	0.0	0.0	0.0	205
684	9.8	3.60	C.C	0.0	0.0	0.0	205
685	40.3	3.70	C.C	0.0	0.0	0.0	205
686	20.7	*4.30	C.0	0.0	0.0	0.0	205
687	51.6	5.50	4.87	4.26	3.98	0.78	135
688	49.1	4.20	C.C	0.0	0.0	0.0	205
689	51.5	5.50	4.37	3.70	3.78	0.0	135
690	51.4	5.50	4.49	3.93	0.0	0.0	165
691	85.0	4.60	0.0	0.0	0.0	0.0	205
691	51.0	4.30	0.C	0.0	0.0	0.0	205
692	49.7	5.50	4.70	4.48	3.85	0.51	105
693	56.5	3.70	C.C	0.0	0.0	0.0	205
694	84.8	3.50	C.C	0.0	0.0	0.0	205
844	8.5	4.60	0.0	4.24	0.0	0.0	105
845	28.0	4.30	0.0	0.0	0.0	0.0	205
846	86.7	4.10	C.0	0.0	0.0	0.0	505
847	32.2	3.70	C.C	0.0	0.0	0.0	205
848	85.1	4.20	0.C	0.0	0.0	0.0	205
849	20.2	3.70	0.0	0.0	0.0	0.0	205
850	84.5	4.10	C.0	0.0	0.0	0.0	205
851	85.2	4.10	C.0	0.0	0.0	0.0	205
852	85.9	4.10	C.0	0.0	0.0	0.0	205
853	52.9	3.90	C.0	0.0	0.0	0.0	205
854	42.5	3.80	C.0	C.0	0.0	0.0	205
855	32.0	4.00	0.0	0.0	0.0	0.0	205

EIL 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
856	12.7	3.70	2.98	0.0	2.27	0.0	105
857	86.2	4.80	0.0	0.0	0.0	0.0	505
858	84.9	4.70	C.0	0.0	0.0	0.0	505
859	84.8	5.70	5.12	4.78	4.61	0.71	105
860	85.9	3.50	C.0	0.0	0.0	0.0	505
861	29.4	3.60	C.0	0.0	0.0	0.0	505
862	15.9	4.60	2.94	2.35	0.0	0.0	105
863	12.5	3.60	C.0	0.0	0.0	0.0	505
864	85.3	4.00	C.0	0.0	0.0	0.0	505
865	38.6	4.50	0.0	0.0	0.0	0.0	505
866	16.1	3.50	0.0	0.0	0.0	0.0	505
867	86.4	4.10	C.0	0.0	0.0	0.0	505
868	84.1	4.30	3.53	3.99	3.59	0.55	135
869	88.0	4.30	C.0	0.0	0.0	0.0	205
870	43.5	4.10	0.0	3.10	0.0	0.0	105
871	85.4	3.80	C.0	0.0	0.0	0.0	505
872	11.9	3.80	C.C	0.0	0.0	0.0	505
873	45.0	4.50	3.52	0.0	0.0	0.0	105
874	13.2	4.40	3.27	2.72	3.06	0.0	105
875	45.1	4.90	4.26	3.53	0.0	0.42	105

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
625	84.6	3.40	C.C	0.0	0.0	0.0	204
626	56.1	5.2C	3.35	2.93	0.0	0.0	104
627	41.4	3.50	2.99	2.70	0.0	0.0	104
628	84.6	3.60	0.0	0.0	0.0	0.0	234
629	56.6	3.60	C.0	0.0	0.0	0.0	304
630	84.7	4.30	C.C	0.0	0.0	0.0	204
631	89.0	3.50	C.0	0.0	0.0	0.0	304
632	91.7	4.5C	C.0	0.0	0.0	0.0	204
633	83.5	3.60	0.0	0.0	0.0	0.0	204
634	65.6	5.C0	C.C	0.0	0.0	0.0	304
635	92.1	4.5C	C.0	0.0	0.0	0.0	204
636	92.0	3.5C	0.0	0.0	0.0	0.0	304
637	86.1	3.6C	C.0	0.0	0.0	0.0	204
638	86.8	3.50	0.0	0.0	0.0	0.0	204
639	19.9	3.6C	C.0	0.0	0.0	0.0	204
640	57.9	3.90	C.0	0.0	0.0	0.0	304
641	57.9	3.90	C.C	0.0	0.0	0.0	304
642	69.4	4.00	0.C	0.0	0.0	0.0	304
643	84.5	4.0C	3.39	3.25	0.0	0.79	104
644	86.1	5.1C	0.0	0.0	0.0	0.0	304
645	87.9	5.1C	0.C	3.30	3.15	0.0	104
646	87.9	3.7C	0.0	0.0	0.0	0.0	204
647	81.9	3.90	C.0	0.0	0.0	0.0	204
648	21.0	3.60	C.C	0.0	0.0	0.0	204
649	92.9	4.30	3.59	3.34	0.0	0.0	104
650	91.7	3.5C	C.0	0.0	0.0	0.0	204
651	93.0	4.90	4.33	3.57	3.31	0.0	104
652	37.6	5.70	2.81	2.58	0.0	0.0	104
653	88.0	5.2C	3.90	3.59	0.0	3.14	104
654	83.6	4.50	C.C	0.0	0.0	0.0	304
655	90.3	4.0C	C.0	3.08	0.0	0.0	134
656	46.7	4.80	3.20	3.10	0.0	0.0	104
657	81.9	4.30	C.C	0.0	0.0	0.0	304
658	74.4	*4.50	C.C	0.0	0.0	0.0	304
659	23.4	4.00	2.55	2.47	0.0	0.0	104
66C	90.8	4.1C	C.0	0.C	0.0	0.0	204
661	88.4	5.2C	4.59	4.00	3.85	0.0	104
662	61.6	4.60	C.C	0.0	0.0	0.0	324
663	98.9	4.20	0.0	0.0	0.0	0.0	204
664	89.4	3.7C	C.0	0.0	0.0	0.0	204
665	25.4	4.0C	C.0	0.0	0.0	0.0	204
666	87.6	3.30	C.C	0.0	0.0	0.0	204
667	88.9	3.8C	C.C	0.0	0.0	0.0	324
668	86.1	3.8C	0.0	0.0	0.0	0.0	204
669	88.5	3.80	C.C	0.0	0.0	0.0	234
670	65.9	4.00	C.0	0.0	0.0	0.0	204
671	90.5	3.6C	C.C	0.0	0.0	0.0	204
672	55.9	5.50	0.C	0.0	0.0	0.0	204
673	80.2	3.8C	C.C	0.0	0.0	0.0	204

TLO 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMEN
674	26.4	3.60	C.C	0.0	0.0	0.0	204
675	86.8	4.00	0.0	0.0	0.0	0.0	304
676	86.2	4.80	C.0	0.0	0.0	0.0	304
677	56.8	3.60	C.0	3.16	0.0	0.0	164
678	83.5	4.20	0.0	0.0	3.12	0.0	164
679	43.4	6.30	5.22	4.23	3.61	0.0	104
680	52.5	5.20	0.0	0.0	0.0	0.0	304
681	89.2	3.70	C.0	2.91	0.0	4.86	104
682	41.8	3.70	0.0	0.0	0.0	0.0	204
683	25.7	4.40	3.18	2.81	2.50	0.0	104
684	23.9	3.60	3.64	3.43	2.72	0.0	104
685	66.3	3.70	C.C	0.0	0.0	0.0	204
686	15.6	*4.30	0.0	0.0	0.0	0.0	204
687	74.3	5.50	4.59	4.28	3.65	0.0	104
688	70.7	4.20	C.C	0.0	0.0	0.0	204
689	74.3	5.50	4.54	4.16	3.55	0.0	104
690	74.2	5.50	4.39	4.23	3.79	0.0	104
691	86.1	4.60	0.0	0.0	0.0	0.0	504
691	73.2	4.30	0.C	0.0	0.0	0.0	204
692	64.5	5.50	4.50	4.08	3.62	0.0	104
693	71.9	3.70	C.0	0.0	0.0	0.0	204
694	84.5	3.50	C.C	0.0	0.0	0.0	204

APPENDIX II-G

BASIC DATA FOR KON

KDN 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
1	57.4	4.10	C.0	0.0	0.0	0.0	206
2	66.3	4.60	0.0	0.0	0.0	0.0	206
3	67.7	4.00	C.C	0.0	0.0	0.0	206
24	45.1	3.90	0.0	4.24	0.0	0.0	106
25	26.4	4.20	0.0	0.0	0.0	0.0	206
26	80.3	4.70	6.27	5.60	0.0	0.0	306
27	79.5	4.60	0.C	0.0	0.0	0.0	306
28	64.2	3.60	C.0	0.0	0.0	0.0	206
29	62.8	4.30	0.C	0.0	0.0	0.0	206
30	69.9	3.80	0.0	0.0	0.0	0.0	206
31	81.9	5.00	4.77	4.77	4.39	1.26	106
32	62.8	4.40	0.0	0.0	0.0	0.0	206
33	64.4	3.90	0.C	0.0	0.0	0.0	206
34	71.6	4.00	C.C	0.0	0.0	0.0	206
35	25.5	4.40	4.26	4.05	4.07	0.62	106
36	26.3	4.90	3.52	3.73	3.41	0.48	106
37	62.9	4.80	4.27	0.0	3.62	1.23	106
38	63.0	4.00	4.24	0.0	3.64	1.09	106
39	54.1	5.30	5.40	0.0	4.68	0.34	106
40	52.2	3.90	3.75	3.12	0.0	0.72	106
41	36.3	5.10	C.C	3.57	0.0	0.85	106
42	67.2	3.90	C.C	0.0	0.0	0.0	206
43	51.0	4.70	C.0	3.37	0.0	2.07	106
44	46.1	5.40	C.0	0.0	0.0	0.0	206
45	47.3	4.60	0.C	0.0	0.0	0.0	206
46	62.7	3.80	C.0	0.0	0.0	0.0	206
47	62.8	3.90	C.C	0.0	0.0	0.0	206
48	27.5	4.10	C.C	0.0	0.0	0.0	206
49	70.6	4.80	C.0	0.0	0.0	0.0	206
50	33.2	4.90	4.11	3.61	0.0	0.47	106
51	15.5	4.10	0.0	0.0	0.0	0.0	206
53	27.1	3.80	0.0	0.0	0.0	0.0	206
54	66.2	4.20	C.C	0.0	0.0	0.0	206
55	25.6	4.40	0.0	0.0	0.0	0.0	206
56	65.5	4.20	C.C	0.0	0.0	0.0	306
57	62.6	4.00	C.C	0.0	0.0	0.0	306
58	65.8	4.00	C.C	0.0	0.0	0.0	306
59	64.1	4.60	C.C	0.0	0.0	0.0	206
60	16.0	*4.20	3.37	3.32	2.84	2.70	106
61	81.3	4.80	0.0	3.63	0.0	1.31	106
62	81.6	4.60	C.0	0.0	3.79	2.81	106
63	16.0	*3.70	C.C	0.0	0.0	0.0	306
65	62.9	3.80	C.0	0.0	0.0	0.0	206
66	68.0	4.10	C.0	0.0	0.0	0.0	206
67	66.3	3.20	0.0	0.0	0.0	0.0	206
68	27.2	4.00	0.0	0.0	0.0	0.0	306
69	68.0	4.80	0.0	0.0	0.0	0.0	306
70	63.1	3.80	C.C	0.0	0.0	0.0	206
71	62.6	3.80	0.C	0.0	0.0	0.0	206

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
72	78.7	4.40	0.0	0.0	0.0	0.0	206
73	50.6	5.50	0.0	4.04	0.0	0.72	106
74	52.3	4.00	C.C	0.0	0.0	0.0	206
75	46.9	4.50	C.0	2.77	0.0	2.28	106
76	43.6	4.40	C.0	0.0	0.0	0.0	206
77	66.5	4.00	C.C	0.0	0.0	0.0	206
78	67.9	3.80	C.C	0.0	0.0	0.0	206
79	50.3	4.70	C.C	0.0	0.0	0.0	206
80	46.5	3.90	C.0	0.0	0.0	0.0	206
81	64.5	3.90	3.96	3.74	0.0	0.94	106
82	62.6	4.10	C.C	0.0	0.0	0.0	206
83	58.1	3.60	C.C	0.0	0.0	0.0	206
84	62.6	3.70	0.C	0.0	0.0	0.0	206
85	67.8	3.60	0.0	4.42	0.0	0.0	306
86	67.1	3.60	0.0	0.0	0.0	0.0	206
87	14.6	4.60	3.60	3.45	0.0	1.71	106
88	30.5	5.10	4.47	0.0	4.07	0.86	106
89	71.3	4.50	4.00	0.0	0.0	1.95	106
90	16.C	*4.50	3.91	3.90	0.0	1.43	106
92	68.3	4.80	0.0	0.0	0.0	0.0	206
93	68.3	4.80	C.C	0.C	0.0	0.0	306
94	15.9	4.40	3.32	3.44	0.0	5.06	106
95	56.7	5.2C	4.15	3.89	3.38	1.26	106
96	54.8	4.50	3.60	0.0	0.0	0.78	106
97	16.0	*4.10	3.49	3.45	2.97	2.04	106
98	16.0	*4.30	3.17	3.18	2.77	1.88	106
99	16.C	*4.10	2.89	2.64	0.0	3.02	106
100	14.7	3.60	2.76	2.59	0.0	3.12	106
101	16.0	*4.30	0.C	0.0	0.0	0.0	306
102	16.6	*3.70	C.C	0.0	0.0	0.0	306
103	16.1	*4.0C	3.20	3.01	0.0	2.05	106
104	15.9	*4.30	3.45	3.40	0.0	2.58	106
105	16.1	*4.20	3.58	3.59	0.0	1.58	106
106	15.8	*4.40	3.14	3.24	0.0	3.27	106
107	60.0	4.10	C.C	0.0	0.0	0.0	206
108	46.7	4.70	C.C	0.0	0.0	0.0	206
109	42.4	4.30	C.C	0.0	0.0	0.0	206
110	16.0	*3.80	C.C	0.0	0.0	0.0	306
111	65.6	4.80	4.31	4.10	0.0	1.80	106
112	84.0	5.70	4.80	0.0	4.45	0.93	106
113	16.0	*4.30	0.C	0.0	0.0	0.0	206
114	81.3	4.80	0.0	3.70	0.0	0.0	106
115	41.0	4.30	C.0	0.0	0.0	0.0	206
116	39.1	5.5C	C.C	0.0	0.0	0.0	206
117	40.8	4.50	3.69	0.0	0.0	3.46	106
118	40.8	3.90	C.C	0.0	0.0	0.0	206
119	40.9	4.10	C.C	0.0	0.0	0.0	506
120	45.6	4.90	4.52	0.0	3.31	0.89	106
122	65.6	3.90	0.0	3.69	0.0	2.40	106

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
123	62.3	4.60	0.0	3.84	0.0	0.71	106
124	71.1	3.80	0.0	0.0	0.0	0.0	206
125	24.4	4.50	0.0	3.25	0.0	2.02	106
126	63.5	3.90	0.0	0.0	0.0	0.0	206
129	45.9	4.80	3.72	0.0	0.0	0.64	106
130	69.2	3.70	0.0	0.0	0.0	0.0	206
131	71.2	4.70	0.0	0.0	0.0	0.0	206
132	63.1	4.00	0.0	0.0	0.0	0.0	206
133	70.8	3.80	4.12	0.0	0.0	0.59	106
134	70.6	5.40	4.79	0.0	0.0	0.78	106
135	50.6	3.90	0.0	0.0	0.0	0.0	206
136	66.7	4.20	0.0	0.0	0.0	0.0	206
137	53.1	3.90	0.0	0.0	0.0	0.0	206
138	62.9	4.10	0.0	0.0	0.0	0.0	206
139	63.7	4.80	0.0	3.49	0.0	0.96	106
140	20.2	3.50	3.64	0.0	0.0	0.0	306
141	44.8	5.30	3.83	3.66	0.0	0.58	306
142	55.7	4.10	0.0	0.0	0.0	0.0	206
143	61.3	3.40	0.0	0.0	0.0	0.0	206
144	43.6	4.00	3.30	0.0	0.0	0.49	106
145	71.2	4.80	3.77	3.44	0.0	1.84	106
146	70.8	4.70	3.71	0.0	0.0	1.83	106
147	71.0	4.90	3.95	0.0	0.0	1.33	106
148	70.4	3.70	0.0	0.0	0.0	0.0	206
149	33.0	3.70	0.0	0.0	0.0	0.0	206
150	45.0	3.80	0.0	0.0	0.0	0.0	206
151	44.1	4.30	0.0	0.0	0.0	0.0	206
152	63.4	3.70	0.0	0.0	0.0	0.0	206
153	63.2	4.50	0.0	0.0	0.0	0.0	206
154	61.1	3.70	0.0	0.0	0.0	0.0	306
155	69.5	3.70	0.0	0.0	0.0	0.0	306
156	68.1	5.00	4.84	0.0	4.28	0.12	106
157	67.8	3.60	0.0	0.0	0.0	0.0	306
158	65.8	4.30	0.0	0.0	0.0	0.0	306
159	63.9	3.80	0.0	0.0	0.0	0.0	206
160	67.8	3.70	0.0	0.0	0.0	0.0	206
161	68.3	3.50	0.0	0.0	0.0	0.0	206
162	68.7	3.80	0.0	0.0	0.0	0.0	206
163	18.8	3.70	0.0	0.0	0.0	0.0	206
164	67.8	4.00	0.0	0.0	0.0	0.0	206
165	67.8	4.90	4.48	3.94	0.0	0.92	106
167	69.3	4.90	0.0	3.27	0.0	0.80	106
166	48.2	3.80	0.0	0.0	0.0	0.0	306
168	63.2	3.30	0.0	0.0	0.0	0.0	206
169	59.9	3.80	0.0	3.43	0.0	0.85	106
170	64.6	4.00	0.0	0.0	0.0	0.0	206
171	67.5	4.70	0.0	0.0	0.0	0.0	506
172	47.2	5.30	5.51	0.0	4.34	0.64	106
173	30.2	3.30	0.0	0.0	0.0	0.0	206

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
174	29.4	3.30	0.0	0.0	0.0	0.0	206
175	28.3	4.90	4.20	4.04	0.0	0.58	106
176	37.2	4.10	0.0	0.0	0.0	0.0	306
177	30.4	3.50	0.0	0.0	0.0	0.0	206
178	65.2	4.50	0.0	0.0	0.0	0.0	206
179	29.1	4.40	3.14	2.93	0.0	1.00	106
180	77.5	4.00	0.0	0.0	0.0	0.0	206
181	42.3	4.50	0.0	0.0	0.0	0.0	206
182	69.0	4.20	0.0	0.0	0.0	0.0	206
183	45.0	4.20	0.0	0.0	0.0	0.0	206
184	62.4	4.10	0.0	0.0	0.0	0.0	206
185	63.9	3.30	C.C	0.0	0.0	0.0	306
186	43.2	3.90	0.0	0.0	0.0	0.0	206
187	38.6	3.60	0.0	0.0	0.0	0.0	206
188	38.6	3.70	0.0	0.0	0.0	0.0	206
189	40.8	4.40	0.0	3.11	0.0	2.10	106
190	39.1	4.20	C.C	0.0	0.0	0.0	206
191	66.7	4.50	0.0	0.0	0.0	0.0	206
192	38.5	3.80	C.0	0.0	0.0	0.0	206
193	44.2	4.40	3.90	0.0	0.0	0.54	106
194	40.6	4.70	0.C	0.0	0.0	0.0	306
195	44.1	3.9C	0.C	0.0	0.0	0.0	306
196	39.9	3.70	C.0	0.0	0.0	0.0	306
197	35.4	3.90	C.0	0.0	0.0	0.0	306
198	38.3	3.40	0.0	0.0	0.0	0.0	306
199	38.3	3.30	C.C	0.0	0.0	0.0	306
200	42.2	4.40	0.0	0.0	0.0	0.0	306
201	38.7	3.60	0.0	0.0	0.0	0.0	206
202	39.6	3.70	0.0	0.0	0.0	0.0	306
203	36.2	3.80	0.0	0.0	0.0	0.0	206
204	38.9	4.20	0.0	0.0	0.0	0.0	206
205	62.5	3.60	4.09	0.0	0.0	0.34	106
206	40.5	4.20	C.0	0.0	0.0	0.0	206
207	41.1	4.00	0.0	0.0	0.0	0.0	206
208	40.9	4.10	3.32	0.0	0.0	0.0	606
209	45.0	3.70	C.C	0.0	0.0	0.0	206
210	36.2	4.00	0.0	0.0	0.0	0.0	206
211	29.9	3.40	0.0	0.0	0.0	0.0	206
212	62.6	4.20	0.0	0.0	0.0	0.0	206
213	40.8	4.00	0.0	0.0	0.0	0.0	306
214	44.5	4.00	0.0	0.0	0.0	0.0	206
216	64.9	3.70	C.0	0.0	0.0	0.0	206
217	61.7	3.90	C.0	0.0	0.0	0.0	206
218	30.5	3.70	3.26	0.0	0.0	1.18	106
219	63.4	3.40	C.0	0.0	0.0	0.0	306
220	67.1	3.50	C.0	0.0	0.0	0.0	206
221	20.0	3.60	0.0	0.0	0.0	0.0	306
222	65.9	3.60	0.0	0.0	0.0	0.0	206
223	13.0	*4.30	3.58	3.44	0.0	0.62	106

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
224	35.4	4.00	3.32	0.0	0.0	1.13	106
225	42.6	3.50	C.C	0.0	0.0	0.0	206
226	69.9	4.20	C.C	0.0	0.0	0.0	306
227	64.7	4.10	C.C	0.0	0.0	0.0	206
228	69.1	4.60	0.0	0.0	0.0	0.0	206
229	35.7	3.80	0.C	0.0	0.0	0.0	206
230	62.8	4.10	0.0	0.0	0.0	0.0	506
231	69.4	4.20	0.0	0.0	0.0	0.0	206
245	57.9	4.50	C.C	0.0	0.0	0.0	206
247	18.0	2.70	C.0	0.0	0.0	0.0	206
248	44.5	4.00	0.0	0.0	0.0	0.0	306
249	67.2	C.0	0.0	0.0	0.0	0.0	206
250	67.4	4.30	C.C	C.0	0.0	0.0	206
251	65.0	4.20	0.0	0.0	0.0	0.0	306
252	68.2	4.00	C.0	0.0	0.0	0.0	306
253	53.0	3.80	C.C	0.0	0.0	0.0	206
254	67.0	4.20	0.0	0.0	0.0	0.0	306
255	45.2	*4.60	3.77	0.0	0.0	0.40	106
256	20.6	3.50	3.34	3.20	0.0	0.21	106
257	66.2	3.30	C.0	0.0	0.0	0.0	206
258	68.8	3.00	C.0	0.0	0.0	0.0	206
259	65.2	3.60	C.C	0.0	0.0	0.0	206
260	38.9	5.50	3.43	3.33	0.0	0.56	106
261	70.2	3.70	C.C	0.0	0.0	0.0	206
262	47.9	4.90	3.92	0.0	0.0	0.45	106
263	9.7	3.80	C.C	0.0	0.0	0.0	306
264	63.2	3.80	0.0	0.0	0.0	0.0	206
265	43.3	4.20	0.0	0.0	0.0	0.0	306
266	35.7	3.60	C.C	0.0	0.0	0.0	206
267	48.6	4.10	0.0	0.0	0.0	0.0	206
268	71.6	4.10	0.C	0.0	0.0	0.0	206
269	61.1	3.80	0.0	0.0	0.0	0.0	206
270	43.4	4.10	0.0	0.0	0.0	0.0	206
271	68.3	3.80	C.C	0.0	0.0	0.0	306
272	44.0	4.00	C.C	0.0	0.0	0.0	306
273	22.7	3.80	C.0	0.0	0.0	0.0	306
274	63.9	4.00	0.C	0.0	0.0	0.0	206
275	53.0	4.10	C.0	0.0	0.0	0.0	206
276	72.6	3.70	C.0	0.0	0.0	0.0	206
277	101.9	3.70	0.0	0.0	0.0	0.0	306
278	23.9	5.40	4.76	4.51	0.0	2.22	106
279	68.4	3.70	0.C	0.0	0.0	0.0	206
280	44.0	3.70	C.0	0.0	0.0	0.0	206
281	56.6	5.30	3.64	3.38	0.0	1.55	106
282	24.3	3.70	C.C	0.0	0.0	0.0	306
283	59.6	3.70	0.0	0.0	0.0	0.0	206
284	46.4	3.60	C.C	0.0	0.0	0.0	206
285	46.5	3.50	0.C	0.0	0.0	0.0	206
286	64.2	4.50	5.02	0.0	0.0	1.39	106

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
287	46.1	3.80	0.0	0.0	0.0	0.0	206
288	50.8	3.40	C.0	2.98	0.0	0.63	106
289	64.3	3.60	3.42	3.73	0.0	0.43	106
290	49.3	3.50	3.83	3.64	0.0	2.04	106
291	77.6	4.10	0.0	0.0	0.0	0.0	306
292	68.0	5.20	3.67	4.02	0.0	0.68	106
293	43.8	4.00	C.C	0.0	0.0	0.0	306
294	41.5	5.20	5.05	0.0	3.74	0.51	106
295	43.6	3.90	0.0	0.0	0.0	0.0	206
296	50.5	3.50	C.C	0.0	0.0	0.0	206
297	67.0	5.00	C.0	0.0	0.0	0.0	306
298	42.2	3.60	0.C	0.0	0.0	0.0	206
299	61.5	3.60	C.C	0.0	0.0	0.0	206
300	66.6	4.70	0.0	4.46	3.97	0.45	106
301	62.0	3.70	C.C	0.0	0.0	0.0	206
302	42.0	3.20	0.C	0.0	0.0	0.0	206
304	68.5	3.60	C.C	0.0	0.0	0.0	206
305	70.6	4.40	C.0	0.0	0.0	0.0	306
306	44.8	3.90	C.C	0.0	0.0	0.0	206
307	69.4	4.00	C.C	0.0	0.0	0.0	206
308	45.2	3.40	3.28	2.94	0.0	0.42	106
309	46.8	3.40	C.C	0.0	0.0	0.0	206
310	68.5	3.90	0.C	0.0	0.0	0.0	206
311	33.5	3.60	3.11	2.58	0.0	0.0	106
312	54.7	3.70	C.0	0.0	0.0	0.0	206
313	22.6	4.10	0.C	0.0	0.0	0.0	206
314	63.5	3.80	C.C	0.0	0.0	0.0	206
315	41.4	4.10	0.C	0.0	0.0	0.0	306
316	66.2	3.80	C.0	0.0	0.0	0.0	306
317	46.3	3.80	0.C	0.0	0.0	0.0	206
318	46.2	3.70	C.C	0.0	0.0	0.0	206
319	45.0	3.50	C.0	0.0	0.0	0.0	206
320	45.8	3.90	C.0	0.0	0.0	0.0	166
321	55.8	3.70	C.C	0.0	0.0	0.0	206
322	63.9	4.30	C.0	0.0	0.0	0.0	306
323	81.8	*5.00	4.42	3.78	2.96	7.14	106
324	42.3	4.20	0.C	0.0	0.0	0.0	306
325	41.9	4.20	0.C	0.0	0.0	0.0	206
326	64.5	4.00	0.0	0.0	0.0	0.0	206
327	66.1	3.40	C.C	0.0	0.0	0.0	206
328	64.6	3.50	C.0	0.0	0.0	0.0	206
330	60.7	3.50	C.0	0.0	0.0	0.0	206
331	62.6	4.00	C.C	0.0	0.0	0.0	306
332	23.1	4.20	3.96	4.18	0.0	8.00	106
333	30.9	3.90	C.0	2.64	0.0	0.0	106
334	49.9	4.80	3.27	2.93	0.0	1.69	106
335	27.2	4.00	3.29	3.12	2.57	0.62	106
336	70.9	3.40	C.C	0.0	0.0	0.0	206
337	67.8	3.60	C.0	0.0	0.0	0.0	206

KON 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
338	62.6	4.70	3.50	3.05	0.0	0.0	306
339	38.9	5.50	0.0	0.0	0.0	0.0	306
340	62.8	3.80	0.0	0.0	0.0	0.0	306
341	81.7	5.40	5.30	4.88	4.46	0.0	106
343	81.7	4.90	0.0	0.0	0.0	0.0	306
344	28.2	4.10	0.0	0.0	0.0	0.0	206
345	70.9	4.30	0.0	0.0	0.0	0.0	306
346	81.8	4.70	3.91	3.16	0.0	0.0	106
347	28.0	4.50	4.22	3.92	3.52	0.0	106
348	61.2	4.70	0.0	4.78	0.0	0.0	106
349	69.2	4.40	0.0	0.0	0.0	0.0	206
350	27.2	4.90	4.43	4.02	3.42	0.0	106
351	111.5	4.90	4.27	4.40	4.25	0.91	106
352	31.5	4.00	0.0	0.0	0.0	0.0	306
412	81.7	5.00	4.42	3.70	0.0	2.68	106
413	61.7	3.60	0.0	0.0	0.0	0.0	306
414	44.3	3.70	3.29	0.0	0.0	0.0	106
415	40.8	4.00	0.0	0.0	0.0	0.0	206
416	50.0	5.50	4.56	4.08	3.52	7.08	106
417	63.7	3.80	0.0	0.0	0.0	0.0	306
418	66.1	4.40	0.0	0.0	0.0	0.0	206
419	50.0	5.40	4.36	3.68	3.15	5.18	106
420	22.6	3.50	0.0	0.0	0.0	0.0	206
421	44.3	5.10	4.65	3.86	3.47	0.0	106
422	17.9	*4.60	3.01	2.72	2.43	0.77	106
423	57.8	3.60	0.0	0.0	0.0	0.0	206
424	62.7	4.20	0.0	0.0	0.0	0.0	206
425	63.5	3.40	0.0	0.0	0.0	0.0	206
426	28.6	4.30	0.0	0.0	0.0	0.0	206
427	36.1	5.60	4.70	4.57	4.41	2.60	106
428	65.0	3.90	0.0	0.0	0.0	0.0	206
429	41.4	3.90	0.0	0.0	0.0	0.0	306
430	31.8	3.70	0.0	0.0	0.0	0.0	206
431	43.3	*4.60	3.73	3.28	2.89	0.0	106
467	79.9	4.10	0.0	0.0	0.0	0.0	306
469	64.6	4.10	0.0	0.0	0.0	0.0	206
470	48.5	4.70	0.0	0.0	0.0	0.0	306
471	45.1	4.20	0.0	0.0	0.0	0.0	206
472	68.2	5.20	3.96	3.94	3.63	1.63	106
473	63.4	3.60	0.0	0.0	0.0	0.0	206
474	43.1	3.70	0.0	0.0	0.0	0.0	206
475	33.0	4.70	3.84	3.33	2.89	0.0	106
476	67.6	5.20	4.35	3.93	3.52	0.54	106
477	48.7	3.50	0.0	0.0	0.0	0.0	206
478	64.1	4.00	0.0	0.0	0.0	0.0	206
479	23.7	4.10	3.38	3.47	0.0	0.22	106
481	58.4	3.90	0.0	0.0	0.0	0.0	306
482	71.4	4.20	3.65	0.0	0.0	0.44	106
483	47.8	3.70	0.0	0.0	0.0	0.0	306

KON 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
484	16.0	4.40	0.0	0.0	0.0	0.0	206
485	82.1	3.80	0.0	0.0	0.0	0.0	306
486	27.4	3.90	0.0	0.0	0.0	0.0	206
487	40.4	4.40	0.0	0.0	0.0	0.0	206
488	40.5	3.90	0.0	0.0	0.0	0.0	206
489	40.5	3.40	0.0	0.0	0.0	0.0	206
490	78.6	3.90	0.0	0.0	0.0	0.0	206
512	15.0	4.00	2.63	3.19	2.68	0.0	106
683	29.0	4.40	3.14	3.10	0.0	0.94	106
684	25.9	3.60	3.45	3.10	2.70	0.79	106
685	52.5	3.70	0.0	0.0	0.0	0.0	206
686	16.1	*4.30	0.0	0.0	0.0	0.0	206
687	57.5	5.50	4.99	4.67	3.86	3.40	106
688	53.7	4.20	0.0	0.0	0.0	0.0	206
689	57.5	5.50	4.79	3.96	0.0	0.57	106
690	57.4	5.50	4.61	3.67	0.0	7.71	106
691	64.9	4.60	3.39	3.34	3.00	0.0	166
691	56.2	4.30	3.35	3.18	0.0	0.58	136
692	45.1	5.50	4.24	4.17	0.0	0.51	106
693	52.1	3.70	0.0	0.0	0.0	0.0	206
694	63.4	3.50	0.0	0.0	0.0	0.0	206
696	40.5	4.40	0.0	0.0	0.0	0.0	206
697	75.8	4.40	3.88	3.26	0.0	0.0	106
698	71.0	4.80	0.0	3.88	0.0	0.0	306
699	39.1	6.20	3.78	3.11	0.0	0.0	106
700	43.6	4.30	0.0	0.0	0.0	0.0	306
701	40.1	4.00	0.0	0.0	0.0	0.0	536
702	45.4	5.50	5.50	4.87	4.41	0.0	106
703	45.8	3.80	2.79	2.78	0.0	0.0	136
704	26.5	5.20	4.15	0.0	0.0	0.77	106
705	44.5	4.20	0.0	0.0	0.0	0.0	306
706	29.9	3.70	0.0	0.0	0.0	0.0	306
707	27.0	4.30	0.0	0.0	0.0	0.0	206
708	61.5	*4.50	3.70	3.74	0.0	1.08	106
709	42.6	4.10	0.0	0.0	0.0	0.0	236
710	70.9	4.30	4.23	3.37	0.0	1.09	106
711	80.5	*5.30	4.72	4.37	0.0	2.76	106
712	45.6	4.30	0.0	0.0	0.0	0.0	306
713	64.6	4.50	4.61	0.0	0.0	0.0	136
714	26.7	4.60	0.0	0.0	0.0	0.0	306
715	68.5	3.70	0.0	0.0	0.0	0.0	206
716	79.8	5.50	5.73	4.83	0.0	1.19	106
717	22.7	4.20	0.0	0.0	0.0	0.0	206
718	43.3	4.70	0.0	3.56	0.0	0.0	136
720	66.6	3.60	0.0	0.0	0.0	0.0	306
721	60.2	3.80	0.0	0.0	0.0	0.0	326
722	44.5	3.80	0.0	0.0	0.0	0.0	206
723	62.8	4.80	4.84	3.87	0.0	6.28	106
724	69.5	3.70	0.0	0.0	0.0	0.0	236

KON 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
725	55.2	3.90	C.C	0.0	0.0	0.0	306
726	82.1	4.10	4.37	4.00	0.0	0.63	106
727	42.3	3.90	0.0	0.0	0.0	0.0	206
728	30.0	4.50	2.64	2.58	0.0	4.88	136
729	45.6	3.90	0.0	0.0	0.0	0.0	306
730	26.3	3.80	0.0	0.0	0.0	0.0	306
731	34.9	3.90	C.C	0.0	0.0	0.0	306
732	67.7	4.40	3.91	3.53	0.0	2.99	106
733	26.4	3.70	C.0	0.0	0.0	0.0	206
734	23.3	4.30	3.52	2.68	0.0	8.19	106
735	71.8	4.00	C.0	0.0	0.0	0.0	506
736	70.6	3.70	C.C	0.0	0.0	0.0	206
737	65.2	4.60	3.62	3.62	0.0	0.0	106
738	70.2	3.90	C.C	0.0	0.0	0.0	306
739	70.1	4.00	C.0	3.00	0.0	0.0	136
741	21.7	*4.80	3.46	3.29	2.92	0.0	106
742	39.7	4.00	0.C	0.0	0.0	0.0	106
743	46.5	4.00	C.0	0.0	0.0	0.0	306
744	79.9	5.70	5.51	5.44	4.73	0.72	106
745	80.6	4.40	C.C	0.0	0.0	0.0	306
746	26.0	3.60	C.C	0.0	0.0	0.0	236
747	28.8	4.10	0.0	0.0	0.0	0.0	306
748	45.6	4.00	0.0	0.0	0.0	0.0	306
749	47.1	4.00	C.C	0.0	0.0	0.0	306
751	22.3	4.30	3.55	3.36	2.86	0.92	106
752	20.9	5.40	4.23	3.83	3.34	1.14	206
753	23.6	4.70	0.0	0.0	0.0	0.0	206
754	40.1	3.70	C.C	0.0	0.0	0.0	306
755	30.8	5.20	C.0	0.0	0.0	0.0	236
756	65.3	3.40	0.0	0.0	0.0	0.0	206
757	60.7	3.90	C.C	0.0	0.0	0.0	306
758	52.7	5.10	4.52	3.70	3.55	0.0	106
759	22.7	4.00	C.0	0.0	0.0	0.0	306
760	43.1	5.60	3.77	3.31	0.0	8.04	136
761	65.6	5.20	3.82	3.88	3.24	0.39	106
762	16.8	4.90	3.79	3.58	3.13	2.61	106
763	29.1	3.90	C.0	0.0	0.0	0.0	306
764	64.7	4.70	C.0	0.0	0.0	0.0	306
765	28.5	4.80	0.0	0.0	0.0	0.0	306
766	62.9	3.60	0.C	0.0	0.0	0.0	206
767	29.7	4.40	C.C	0.0	0.0	0.0	236
768	45.8	3.60	0.C	0.0	0.0	0.0	306
769	45.8	4.10	C.0	0.0	0.0	0.0	306
770	43.7	3.60	C.C	0.0	0.0	0.0	206
771	15.7	*4.40	3.29	2.78	0.0	2.17	106
772	65.2	3.90	C.C	0.0	0.0	0.0	306
773	17.1	3.90	2.98	0.0	0.0	2.45	136
774	41.9	4.70	0.0	2.74	0.0	0.0	206
775	39.3	5.40	4.92	4.31	3.97	1.20	106

KON 01/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
776	63.3	4.80	3.94	0.0	0.0	1.38	136
777	78.6	4.10	C.0	0.0	0.0	0.0	206
778	26.8	5.10	3.73	3.59	2.87	0.0	106
779	78.9	3.60	C.0	0.0	0.0	0.0	206
780	68.0	3.90	C.0	0.0	0.0	0.0	206
781	44.9	5.00	C.0	3.81	3.75	0.0	106
782	68.2	4.00	C.C	0.0	0.0	0.0	206
783	64.2	4.40	0.0	0.0	0.0	0.0	206
784	69.2	4.10	C.0	0.0	0.0	0.0	236
785	76.7	5.30	4.55	4.71	3.66	1.10	106
786	27.0	4.30	0.0	3.03	0.0	2.17	106
787	78.8	3.70	C.C	0.0	0.0	0.0	206
788	46.6	3.90	C.0	0.0	0.0	0.0	206
789	78.8	4.20	C.C	0.0	0.0	0.0	306
790	78.7	4.70	4.33	3.89	0.0	2.12	106
791	63.1	3.70	C.0	0.0	0.0	0.0	206
793	43.5	4.10	C.C	0.0	0.0	0.0	206
849	18.0	3.70	C.C	0.0	0.0	0.0	206
850	62.6	4.10	0.0	0.0	0.0	0.0	206
851	63.5	4.10	C.0	0.0	0.0	0.0	206
852	68.0	4.10	C.0	0.0	0.0	0.0	206
853	66.7	3.90	C.0	0.0	0.0	0.0	206
854	52.4	3.80	C.C	0.0	0.0	0.0	206
855	46.6	4.00	C.C	0.0	0.0	0.0	206
856	22.0	3.70	2.94	2.89	0.0	0.0	106
857	65.2	4.80	3.87	3.20	3.09	0.88	106
858	69.9	4.70	4.10	0.0	0.0	0.0	166
859	64.8	5.70	5.24	5.30	4.88	0.24	106
860	65.2	3.50	C.0	0.0	0.0	0.0	306
861	53.1	3.60	0.0	0.0	0.0	0.0	206
862	42.7	4.60	0.0	0.0	0.0	0.0	206
863	22.8	3.60	3.61	0.0	0.0	0.0	106
864	69.7	4.00	C.0	0.0	0.0	0.0	306
865	38.7	4.50	0.0	0.0	0.0	0.0	306
866	20.1	3.50	C.0	0.0	0.0	0.0	206
867	68.2	4.10	3.36	0.0	0.0	0.0	166
868	62.4	4.30	0.0	0.0	0.0	0.0	306
869	65.3	4.30	C.C	0.0	0.0	0.0	206
870	57.2	4.10	C.C	0.0	0.0	0.0	206
871	71.1	3.80	C.0	0.0	0.0	0.0	306
872	37.5	3.80	0.0	0.0	0.0	0.0	206
873	55.5	4.50	0.0	0.0	0.0	0.0	236
874	21.7	4.40	0.0	0.0	0.0	0.0	206
875	55.6	4.90	4.89	4.12	0.0	0.0	106

APPENDIX II-H

BASIC DATA FOR OGD

OGD 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
1	71.6	4.10	0.0	4.71	0.0	0.0	107
2	78.2	4.60	0.0	0.0	0.0	0.0	207
3	79.0	4.00	0.0	0.0	0.0	0.0	207
4	85.5	4.00	0.0	0.0	0.0	0.0	207
5	69.0	4.20	0.0	0.0	0.0	0.0	207
6	93.0	5.20	0.0	0.0	0.0	0.0	307
7	76.1	4.80	0.0	4.34	0.0	0.0	107
8	76.0	4.50	0.0	0.0	0.0	0.0	207
9	77.9	3.40	0.0	0.0	0.0	0.0	507
10	72.4	4.30	0.0	0.0	0.0	0.0	207
11	114.7	4.80	0.0	0.0	0.0	0.0	207
12	71.4	4.40	0.0	0.0	0.0	0.0	207
13	114.6	*4.60	0.0	0.0	0.0	0.0	207
14	98.6	3.90	0.0	0.0	0.0	0.0	207
15	78.9	3.80	0.0	0.0	0.0	0.0	207
16	87.2	4.50	0.0	0.0	0.0	0.0	207
17	61.4	4.00	0.0	0.0	0.0	0.0	207
18	95.8	4.50	0.0	0.0	0.0	0.0	507
19	68.5	4.00	0.0	0.0	0.0	0.0	207
20	71.3	3.90	0.0	0.0	0.0	0.0	207
21	92.9	4.70	0.0	0.0	0.0	0.0	207
22	113.5	4.70	0.0	0.0	0.0	0.0	207
23	95.2	5.20	0.0	0.0	0.0	0.0	207
24	96.2	3.90	0.0	0.0	0.0	0.0	207
25	79.1	4.20	0.0	0.0	0.0	0.0	207
26	115.7	4.70	6.13	6.10	0.0	1.61	107
27	114.7	4.60	0.0	4.39	3.73	1.07	107
28	72.0	3.60	0.0	0.0	0.0	0.0	207
29	71.4	4.30	0.0	0.0	0.0	0.0	207
30	85.6	3.80	0.0	0.0	0.0	0.0	207
31	116.5	5.00	4.07	4.05	3.65	0.0	107
32	71.4	4.40	0.0	0.0	0.0	0.0	207
33	70.3	3.90	0.0	0.0	0.0	0.0	207
34	87.5	4.00	0.0	0.0	0.0	0.0	207
35	75.5	4.40	0.0	0.0	0.0	0.0	207
36	73.2	4.90	4.08	0.0	0.0	0.30	107
37	71.4	4.80	4.23	0.0	3.27	1.33	107
38	71.6	4.00	4.23	0.0	3.25	1.55	107
39	71.7	5.30	5.10	4.94	4.49	2.02	107
40	60.7	3.90	3.66	0.0	0.0	1.27	307
41	88.6	5.10	0.0	0.0	0.0	0.0	307
42	79.4	3.90	0.0	0.0	0.0	0.0	207
43	80.7	4.70	0.0	0.0	0.0	0.0	207
44	95.2	5.40	0.0	0.0	0.0	0.0	307
45	96.3	4.60	0.0	0.0	0.0	0.0	307
46	71.9	3.80	0.0	0.0	0.0	0.0	207
47	71.6	3.90	0.0	0.0	0.0	0.0	207
48	75.4	4.10	0.0	0.0	0.0	0.0	207
49	85.8	4.80	0.0	0.0	0.0	0.0	307

OGD 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
50	85.9	4.90	0.0	0.0	0.0	0.0	207
51	58.3	4.10	0.0	0.0	0.0	0.0	207
52	74.4	4.80	0.0	0.0	0.0	0.0	207
55	75.5	4.40	0.0	0.0	0.0	0.0	207
56	76.4	4.20	0.0	0.0	0.0	0.0	307
57	71.7	4.00	0.0	0.0	0.0	0.0	207
58	76.6	4.00	0.0	0.0	0.0	0.0	207
59	73.8	4.60	0.0	0.0	0.0	0.0	507
60	61.7	*4.20	0.0	0.0	0.0	0.0	207
61	114.5	4.80	0.0	0.0	0.0	0.0	-507
62	114.7	4.60	0.0	4.02	0.0	0.90	107
63	61.7	*3.70	0.0	0.0	0.0	0.0	307
65	70.9	3.80	0.0	4.00	0.0	0.0	107
66	79.6	4.10	0.0	0.0	0.0	0.0	307
67	86.2	3.20	0.0	0.0	0.0	0.0	207
68	74.8	4.00	0.0	0.0	0.0	0.0	307
69	79.6	4.80	0.0	0.0	0.0	0.0	307
70	71.6	3.80	0.0	0.0	0.0	0.0	207
71	71.9	3.80	0.0	3.41	0.0	1.09	107
72	108.7	4.40	0.0	0.0	0.0	0.0	207
73	103.2	5.90	0.0	4.06	0.0	0.0	107
74	102.2	4.00	0.0	0.0	0.0	0.0	207
75	95.3	4.50	0.0	0.0	0.0	0.0	207
76	92.4	4.40	0.0	0.0	0.0	0.0	207
77	89.7	4.00	0.0	0.0	0.0	0.0	207
78	78.8	3.80	0.0	0.0	0.0	0.0	207
79	101.2	4.70	0.0	0.0	0.0	0.0	207
80	99.3	3.90	0.0	0.0	0.0	0.0	207
81	96.9	3.90	0.0	3.88	0.0	0.76	107
82	71.6	4.10	0.0	0.0	0.0	0.0	207
83	71.4	3.60	0.0	0.0	0.0	0.0	207
84	72.0	3.70	0.0	0.0	0.0	0.0	207
85	84.9	3.60	0.0	0.0	0.0	0.0	207
86	76.6	3.60	0.0	0.0	0.0	0.0	207
87	69.3	4.60	0.0	3.38	0.0	0.71	107
88	83.3	5.10	4.93	4.72	0.0	0.72	107
89	115.5	4.50	0.0	4.27	0.0	0.47	107
90	61.7	*4.50	4.05	3.79	0.0	0.88	107
92	80.8	4.80	0.0	0.0	0.0	0.0	207
93	80.8	4.80	0.0	0.0	0.0	0.0	207
94	61.6	4.40	3.87	0.0	0.0	0.92	107
95	106.0	5.20	0.0	3.92	0.0	0.53	107
96	105.5	4.50	0.0	0.0	0.0	0.0	207
97	61.7	*4.10	3.96	3.34	0.0	0.54	107
98	61.7	*4.30	3.60	0.0	0.0	0.46	107
99	61.7	*4.10	0.0	0.0	0.0	0.0	207
100	60.9	3.60	0.0	0.0	0.0	0.0	207
101	61.7	*4.30	0.0	0.0	0.0	0.0	307
102	62.2	*3.70	0.0	0.0	0.0	0.0	207

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
103	61.9	*4.00	C.0	0.0	0.0	0.0	207
104	61.6	*4.30	3.71	0.0	0.0	0.68	107
105	61.8	*4.20	3.82	0.0	0.0	0.78	107
106	61.5	*4.40	C.0	3.50	0.0	0.72	107
107	108.3	4.10	C.C	0.0	0.0	0.0	207
108	94.7	4.70	0.0	0.0	0.0	0.0	207
109	90.0	4.30	C.C	0.0	0.0	0.0	207
110	61.6	*3.80	0.C	0.0	0.0	0.0	207
111	75.3	4.80	C.0	0.0	0.0	0.0	207
112	117.7	5.70	5.27	0.0	4.69	1.20	107
113	61.7	*4.30	C.C	0.0	0.0	0.0	207
114	114.3	4.80	C.C	0.0	0.0	0.0	507
122	75.3	3.90	0.C	3.58	0.0	0.0	107
127	84.0	4.10	0.0	0.0	0.0	0.0	207
128	72.4	4.50	0.C	0.0	0.0	0.0	507
129	94.3	4.80	0.0	0.0	0.0	0.0	207
130	83.4	3.70	C.C	0.0	0.0	0.0	207
131	87.1	4.70	3.81	0.0	0.0	0.32	107
132	72.6	4.00	0.0	0.0	0.0	0.0	207
133	86.0	5.20	0.0	4.20	0.0	0.28	107
134	85.8	5.40	4.98	C.0	4.15	0.26	107
135	102.3	3.90	0.0	0.0	0.0	0.0	207
136	84.1	4.20	C.C	0.0	0.0	0.0	207
137	99.3	3.90	C.C	0.0	0.0	0.0	207
138	82.9	4.10	C.0	0.0	0.0	0.0	207
139	73.2	4.80	C.C	0.0	0.0	0.0	307
140	68.7	4.00	0.C	0.0	0.0	0.0	207
141	96.2	5.30	4.14	4.03	0.0	0.60	307
142	89.5	4.10	0.0	0.0	0.0	0.0	207
143	73.9	3.40	3.84	0.0	0.0	0.0	107
144	95.3	4.00	C.C	0.0	0.0	0.0	207
214	95.0	4.00	C.C	0.0	0.0	0.0	207
216	74.8	3.70	C.C	0.0	0.0	0.0	207
217	110.3	3.90	C.C	0.0	0.0	0.0	207
218	51.9	3.70	0.0	0.0	0.0	0.0	307
219	72.2	3.40	C.C	0.0	0.0	0.0	307
220	75.6	3.50	C.C	0.0	0.0	0.0	207
221	69.2	3.60	0.C	0.0	0.0	0.0	207
222	72.0	3.60	0.0	0.0	0.0	0.0	207
223	47.6	*4.30	C.0	3.87	0.0	0.40	107
224	86.8	4.00	C.C	0.0	0.0	0.0	207
225	91.9	3.50	0.0	0.0	0.0	0.0	207
226	85.9	4.60	0.0	0.0	0.0	0.0	207
227	75.1	4.10	0.0	0.0	0.0	0.0	207
228	83.5	4.60	0.0	0.0	0.0	0.0	207
229	60.9	3.80	0.0	0.0	0.0	0.0	507
230	71.2	4.10	0.0	0.0	0.0	0.0	507
231	85.8	4.20	0.0	0.0	0.0	0.0	507
232	64.3	*4.40	0.0	0.0	0.0	0.0	507

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EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LP RATIO	COMMENT
233	78.7	4.5C	C.C	0.0	0.0	0.0	607
234	83.1	4.30	C.C	0.0	0.0	0.0	507
235	95.[illegible]	4.50	0.C	0.0	0.0	0.0	307
236	94.5	4.40	0.0	0.0	0.0	0.0	507
237	68.0	3.60	C.0	0.0	0.0	0.0	507
238	95.6	5.1C	0.0	0.0	0.0	0.0	307
239	96.1	*3.7C	C.0	0.0	0.0	0.0	507
240	111.0	4.00	C.C	0.0	0.0	0.0	507
241	74.1	3.9C	C.C	0.0	0.0	0.0	507
242	85.1	3.7C	C.C	0.0	0.0	0.0	507
243	81.1	5.4C	C.C	0.C	0.0	0.0	507
245	98.9	4.5C	C.0	0.0	0.0	0.0	507
247	66.8	2.7C	C.0	0.0	0.0	0.0	507
248	97.2	4.00	C.C	0.0	0.0	0.0	507
249	116.3	C.C	0.0	0.0	0.0	0.0	507
250	114.9	4.30	0.0	0.0	0.0	0.0	207
251	79.2	4.2C	0.C	0.0	0.0	0.0	507
252	79.1	4.CC	C.C	0.0	0.0	0.0	307
253	102.3	3.8C	0.C	0.0	0.0	0.0	307
254	83.0	4.20	C.0	0.0	0.0	0.0	507
255	97.9	*4.6C	C.C	0.0	0.0	0.0	507
256	69.2	3.50	C.0	0.0	0.0	0.0	507
257	77.5	3.30	C.C	0.0	0.0	0.0	507
258	83.1	3.CC	C.C	0.C	0.0	0.0	507
259	74.C	3.6C	0.0	0.0	0.0	0.0	507
260	86.1	5.5C	0.0	0.C	0.0	0.0	507
261	85.2	3.7C	C.C	0.0	0.0	0.0	507
262	99.3	4.9C	C.C	0.0	0.0	0.0	607
263	57.3	3.80	C.C	0.0	0.0	0.0	507
264	71.4	3.80	C.C	C.C	0.0	0.0	507
265	94.6	4.2C	C.C	0.0	0.0	0.0	507
266	54.8	3.60	C.C	0.0	0.0	0.0	507
267	99.3	4.10	C.0	0.0	0.0	0.0	507
268	83.2	4.10	0.0	0.0	0.0	0.0	507
269	74.2	3.8C	C.0	0.0	0.0	0.0	507
270	95.9	4.10	C.C	0.0	0.0	0.0	507
271	78.7	3.8C	C.C	0.0	0.0	0.0	507
272	95.5	4.00	C.C	0.0	0.0	0.0	507
273	71.8	3.80	0.C	0.0	0.0	0.0	507
274	71.2	4.00	0.C	0.0	0.0	0.0	507
275	102.2	4.10	C.C	0.0	0.0	0.0	507
285	99.3	3.50	C.C	0.0	0.0	0.0	207
310	81.1	3.90	C.0	0.0	0.0	0.0	507
321	102.0	3.70	C.C	0.0	0.0	0.0	207
339	86.1	5.50	0.C	0.0	0.0	0.0	307
340	70.3	3.80	C.C	0.0	0.0	0.0	307
341	116.3	5.4C	C.0	0.0	0.0	0.0	507
342	87.2	4.90	0.C	0.0	0.0	0.0	507
343	116.4	4.9C	C.0	0.0	0.0	0.0	507

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
348	108.4	4.70	C.C	0.0	0.0	0.0	507
349	82.3	4.40	0.0	0.0	0.0	0.0	507
350	75.2	4.90	3.47	3.10	2.46	10.80	107
351	58.7	4.90	4.07	3.69	3.48	0.0	107
352	83.9	4.00	0.0	0.0	0.0	0.0	307
353	92.2	3.60	0.0	0.0	0.0	0.0	207
354	101.9	4.50	3.39	2.96	2.51	6.57	107
355	86.8	3.70	C.0	0.0	0.0	0.0	207
356	88.2	4.00	0.0	0.0	0.0	0.0	307
357	74.8	3.30	0.0	0.0	0.0	0.0	507
358	81.9	4.00	0.0	0.0	0.0	0.0	507
359	82.7	4.30	0.0	0.0	0.0	0.0	507
360	86.7	3.70	C.0	0.0	0.0	0.0	207
361	88.0	5.40	C.0	0.0	0.0	0.0	307
362	88.0	5.10	4.10	3.98	3.36	10.04	107
363	74.0	3.70	0.0	0.0	0.0	0.0	307
365	72.5	3.80	C.0	0.0	0.0	0.0	507
366	85.4	4.70	0.0	0.0	0.0	0.0	307
367	88.0	5.30	0.0	0.0	0.0	0.0	507
369	92.7	3.50	0.0	0.0	0.0	0.0	507
370	98.0	3.60	C.0	0.0	0.0	0.0	207
371	61.8	*4.50	4.18	4.13	3.95	0.17	107
373	70.3	4.90	4.27	4.20	3.75	0.0	107
374	70.5	3.50	0.0	0.0	0.0	0.0	507
375	74.1	3.30	C.C	0.0	0.0	0.0	507
376	72.1	4.10	0.0	0.0	0.0	0.0	207
377	96.1	4.50	0.C	0.0	0.0	0.0	207
378	75.9	3.60	0.0	0.0	0.0	0.0	207
379	87.2	3.70	C.C	0.0	0.0	0.0	507
380	60.1	*4.30	0.0	0.0	0.0	0.0	207
381	86.1	4.60	C.0	3.43	0.0	0.0	107
383	81.1	3.90	0.0	0.0	0.0	0.0	507
384	93.8	4.30	C.0	0.0	0.0	0.0	157
385	75.2	4.40	3.01	2.50	2.36	0.0	107
386	70.3	5.00	0.0	0.0	0.0	0.0	157
388	85.6	4.50	C.0	0.0	0.0	0.0	307
389	79.9	4.10	0.0	0.0	0.0	0.0	207
390	94.3	4.00	0.C	0.0	0.0	0.0	207
391	84.2	3.70	0.C	0.0	0.0	0.0	507
392	101.7	3.60	C.0	0.0	0.0	0.0	507
402	88.1	4.60	2.83	0.0	0.0	0.0	307
403	97.1	3.70	C.0	0.0	0.0	0.0	507
404	96.1	3.50	C.0	0.0	0.0	0.0	307
405	63.9	*4.50	3.41	3.04	0.0	0.0	107
407	96.0	3.80	0.0	0.0	0.0	0.0	207
408	95.8	3.40	0.0	0.0	0.0	0.0	207
409	63.1	*3.70	C.C	0.0	0.0	0.0	507
410	96.1	4.70	4.38	3.93	3.33	3.07	107
411	74.C	4.10	4.13	3.53	3.42	0.52	107

OGD 01/01/72 - 08/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
412	116.3	5.00	4.60	4.29	3.98	0.0	107
413	73.2	3.60	0.0	0.0	0.0	0.0	307
414	96.0	3.70	C.0	0.0	0.0	0.0	207
415	92.8	4.00	C.0	0.0	0.0	0.0	207
416	102.1	5.50	4.63	4.27	4.13	0.0	207
417	74.4	3.80	C.C	0.0	0.0	0.0	207
418	112.2	4.40	3.93	3.61	0.0	0.0	107
419	102.1	*5.20	4.31	3.79	3.54	0.0	107
420	74.8	3.50	C.C	0.0	0.0	0.0	207
421	95.5	5.10	4.26	3.98	3.66	0.0	107
422	66.5	*4.60	C.0	0.0	0.0	0.0	307
423	104.8	3.60	C.0	0.0	0.0	0.0	207
424	70.6	4.20	C.0	0.0	0.0	0.0	207
425	71.8	3.40	C.0	0.0	0.0	0.0	207
428	74.4	3.90	0.0	0.0	0.0	0.0	207
429	94.0	3.90	0.0	0.0	0.0	0.0	507
430	74.9	3.70	C.0	0.0	0.0	0.0	207
431	94.2	*4.60	0.0	0.0	0.0	0.0	307

APPENDIX II-I

BASIC DATA FOR KIP

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
310	46.5	3.90	C.C	0.0	0.0	0.0	20R
311	95.5	3.60	0.0	0.0	0.0	0.0	50R
312	81.4	3.70	0.C	0.0	0.0	0.0	50R
313	119.5	4.10	0.0	0.C	0.0	0.0	50R
314	43.9	3.80	C.C	0.0	0.0	0.0	50R
315	120.6	4.10	C.C	0.0	0.0	0.0	50R
316	48.4	3.80	C.C	0.C	0.0	0.0	50R
317	95.8	3.80	C.C	0.0	0.0	0.0	50R
318	95.8	3.70	0.C	0.0	0.0	0.0	50R
319	95.8	3.50	C.0	0.0	0.0	0.0	50R
320	96.4	3.90	C.0	0.0	0.0	0.0	50R
321	92.4	3.70	C.C	0.0	0.0	0.0	50R
323	69.8	*5.00	4.37	4.04	0.0	0.0	10R
324	121.4	4.20	3.81	0.0	0.0	0.0	10R
326	46.C	4.C0	C.0	0.0	0.0	0.0	50R
327	40.4	3.40	C.0	0.C	0.0	0.0	50R
328	42.9	3.5C	C.C	0.0	0.0	0.0	50R
329	122.3	4.10	0.0	0.C	0.0	0.0	50R
330	90.2	3.50	C.C	0.0	0.0	0.0	50R
331	45.0	4.00	C.0	0.0	0.0	0.0	50R
332	120.8	4.20	3.81	3.50	0.0	0.0	10R
333	120.0	3.90	C.0	0.0	0.0	0.0	50R
334	110.8	4.80	C.C	0.0	0.0	0.0	50R
335	71.9	4.00	3.61	3.55	0.0	0.0	10R
336	49.6	3.40	C.C	0.0	0.0	0.0	20R
337	46.2	3.60	C.0	0.0	0.0	0.0	50R
338	44.5	4.7C	3.49	3.71	0.0	0.0	10R
339	93.2	5.50	C.0	0.0	0.0	0.0	30R
340	43.6	3.8C	C.0	0.0	0.0	0.0	30R
341	75.2	5.40	5.64	5.28	0.0	0.22	10R
342	119.9	4.90	4.63	0.0	0.0	0.0	10R
343	75.2	4.9C	C.0	0.0	0.0	0.0	30R
344	114.3	4.10	C.C	0.0	0.0	0.0	20R
345	98.8	4.30	C.C	0.0	0.0	0.0	20R
346	75.1	4.70	0.0	0.C	0.0	0.0	30R
347	111.3	4.50	C.C	0.0	0.0	0.0	30R
348	95.3	4.70	C.C	0.0	0.0	0.0	20R
349	46.9	4.40	4.05	0.0	0.0	0.0	10R
350	123.6	4.9C	C.0	3.68	0.0	0.0	10R
351	57.4	4.90	5.17	5.08	4.49	4.38	10R
352	118.0	4.CC	3.88	3.57	3.66	0.0	10R
353	120.6	3.60	C.C	0.0	0.0	0.0	20R
354	114.4	4.50	3.77	3.51	3.14	5.77	10R
355	48.1	3.7C	0.C	0.C	0.0	0.0	20R
356	120.9	4.CC	0.0	0.0	0.0	0.0	30R
357	44.9	3.3C	C.C	0.0	0.0	0.0	30R
358	47.8	4.CO	C.C	0.0	0.0	0.0	10R
359	47.5	4.30	0.C	0.C	0.0	0.0	50R
360	49.6	3.70	C.C	0.0	0.0	0.0	20R

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
361	120.7	5.40	C.C	0.0	0.0	0.0	30R
362	120.8	5.10	5.00	4.74	4.32	0.0	10R
363	43.9	3.70	C.0	0.0	0.0	0.0	30R
365	44.9	3.80	3.29	3.13	2.82	0.0	10R
366	112.5	4.70	C.C	3.96	0.0	0.0	10R
367	120.9	5.30	C.0	0.0	0.0	0.0	15R
369	120.2	3.50	0.0	0.C	0.0	0.0	20R
370	121.4	3.60	C.0	0.0	0.0	0.0	20R
371	114.4	*4.50	4.20	3.65	3.51	0.0	10R
373	120.3	4.90	C.C	0.0	0.0	0.0	15R
374	41.0	3.5C	0.C	0.0	0.0	0.0	20R
375	120.3	3.30	C.C	0.C	0.0	0.0	30R
376	45.9	4.10	C.C	0.0	0.0	0.0	20R
377	107.3	4.50	0.0	0.0	0.0	0.0	20R
378	46.5	3.60	C.0	0.0	0.0	0.0	20R
379	120.0	3.70	C.C	0.0	0.0	0.0	20R
380	110.0	*4.30	0.C	0.0	0.0	0.0	20R
381	48.9	4.60	C.0	0.0	0.0	0.0	50R
382	46.5	3.90	C.0	0.0	0.0	0.0	20R
384	120.3	4.30	0.0	0.0	0.0	0.0	30R
385	119.0	4.40	0.C	0.0	0.0	0.0	20R
386	41.5	5.00	4.57	4.18	0.0	1.92	10R
388	47.1	4.50	2.94	2.76	2.54	5.18	10R
389	44.6	4.1C	0.0	0.C	0.0	0.0	20R
390	121.9	4.00	3.46	3.36	3.23	1.68	10R
391	61.7	3.70	C.0	0.0	0.0	0.0	20R
392	106.3	3.60	3.85	3.32	0.0	0.0	10R
393	44.4	4.30	3.37	2.99	2.74	0.0	10R
394	45.9	3.70	C.0	0.0	0.0	0.0	30R
395	73.8	4.10	C.0	0.0	0.0	0.0	20R
396	44.9	4.30	3.03	2.75	2.46	3.98	10R
397	118.9	3.80	0.0	0.0	0.0	0.0	30R
398	114.3	*3.8C	C.0	0.0	0.0	0.0	30R
399	46.8	4.5C	3.93	3.48	3.05	0.0	10R
402	121.0	4.60	3.73	3.45	0.0	1.25	10R
403	103.1	3.7C	C.0	0.0	0.0	0.0	20R
404	121.7	3.50	C.C	0.C	0.0	0.0	20R
405	114.7	*4.50	C.0	0.C	0.0	0.0	30R
407	107.4	3.80	C.0	0.0	0.0	0.0	50R
408	102.4	3.40	C.0	0.0	0.0	0.0	20R
409	114.3	*3.70	0.C	0.C	0.0	0.0	20R
410	106.8	4.70	4.05	3.45	3.01	4.63	10R
411	45.4	4.1C	3.50	3.46	0.0	0.0	10R
412	75.1	5.0C	4.40	4.32	0.0	0.0	10R
413	47.4	3.60	C.0	0.0	0.0	0.0	50R
414	107.4	3.70	C.C	0.0	0.0	0.0	30R
415	108.1	4.C0	C.C	0.0	0.0	0.0	20R
416	110.9	5.50	3.94	3.62	0.0	0.0	10R
417	45.9	3.80	C.0	0.0	0.0	0.0	30R

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
418	93.5	4.40	C.0	0.0	0.0	0.0	208
419	110.9	*5.20	0.0	0.0	0.0	0.0	308
420	104.3	3.50	0.0	0.0	0.0	0.0	208
421	106.9	5.10	C.0	0.0	0.0	0.0	308
422	115.6	*4.60	3.92	3.92	3.59	0.0	108
423	94.6	3.60	0.0	0.0	0.0	0.0	208
424	44.1	4.20	0.0	0.0	0.0	0.0	208
425	43.9	3.40	0.0	0.0	0.0	0.0	208
426	122.8	4.30	0.0	0.0	0.0	0.0	208
427	129.7	5.60	5.06	5.14	5.11	0.26	108
429	120.6	3.90	4.08	3.79	3.52	2.68	108
430	94.4	3.70	0.0	0.0	0.0	0.0	208
431	104.0	*4.60	C.0	0.0	0.0	0.0	308
432	120.9	4.40	0.0	0.0	0.0	0.0	208
433	73.5	4.90	4.43	4.06	0.0	1.45	108
435	42.4	3.40	C.0	0.0	0.0	0.0	208
436	121.5	5.40	0.0	0.0	0.0	0.0	508
437	121.6	4.60	C.C	0.0	0.0	0.0	308
438	121.5	5.00	4.19	3.66	3.42	0.0	108
439	106.0	4.30	0.0	0.0	0.0	0.0	208
440	120.6	4.00	C.C	0.0	0.0	0.0	208
441	121.1	4.00	0.0	0.0	0.0	0.0	208
442	121.5	5.10	0.0	0.0	0.0	0.0	308
443	45.6	4.00	0.0	0.0	0.0	0.0	308
444	116.7	3.40	0.0	0.0	0.0	0.0	208
445	121.7	3.90	C.0	0.0	0.0	0.0	308
446	44.8	4.40	3.40	3.16	0.0	0.0	108
447	48.7	3.60	0.0	0.0	0.0	0.0	308
448	48.7	3.80	0.C	0.0	0.0	0.0	208
449	94.8	4.60	4.00	3.49	3.30	0.0	108
450	92.3	3.50	C.C	0.0	0.0	0.0	208
451	91.3	4.30	3.70	3.24	2.88	0.0	108
452	119.4	3.40	0.0	0.0	0.0	0.0	208
453	120.2	4.00	C.0	0.0	0.0	0.0	508
454	121.7	4.70	0.0	0.0	0.0	0.0	208
455	120.1	4.10	C.0	0.0	0.0	0.0	308
456	93.3	4.40	0.0	0.0	0.0	0.0	208
457	122.0	3.10	0.0	0.0	0.0	0.0	208
458	111.0	4.30	0.0	0.0	0.0	0.0	308
459	51.1	3.90	0.0	0.0	0.0	0.0	208
460	45.0	3.70	C.C	0.0	0.0	0.0	308
461	94.7	5.00	4.50	4.62	3.93	1.25	108
462	86.8	3.70	C.0	0.0	0.0	0.0	208
463	117.0	4.70	0.0	0.C	0.0	0.0	308
464	45.6	4.90	4.03	3.95	3.35	0.25	108
465	48.4	4.20	C.0	0.0	0.0	0.0	208
466	122.5	4.00	C.0	0.0	0.0	0.0	308
467	64.3	4.10	3.63	3.27	0.0	0.0	108
469	44.3	4.10	0.0	0.0	0.0	0.0	508

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR PATIC	COMMENT
470	91.0	4.70	0.0	0.0	0.0	0.0	308
471	104.9	4.20	0.0	0.0	0.0	0.0	208
472	46.3	5.20	4.11	4.30	3.62	0.0	108
473	44.4	3.60	0.0	0.0	0.0	0.0	208
474	115.4	3.70	0.0	0.0	0.0	0.0	208
475	118.3	4.70	0.0	0.0	0.0	0.0	508
476	46.0	5.20	3.89	4.05	3.32	0.50	108
477	107.0	3.50	0.0	0.0	0.0	0.0	208
478	42.1	4.00	0.0	0.0	0.0	0.0	208
479	121.3	4.10	0.0	0.0	0.0	0.0	208
482	48.2	4.20	3.70	3.10	0.0	0.0	108
483	116.7	3.70	0.0	0.0	0.0	0.0	208
484	114.3	4.40	0.0	0.0	0.0	0.0	208
485	72.4	3.80	0.0	0.0	0.0	0.0	208
486	121.9	3.90	0.0	0.0	0.0	0.0	208
487	121.5	4.40	0.0	0.0	0.0	0.0	208
488	121.5	3.90	0.0	0.0	0.0	0.0	208
489	121.5	3.40	0.0	0.0	0.0	0.0	208
490	62.7	3.90	0.0	0.0	0.0	0.0	208
491	97.6	3.80	0.0	0.0	0.0	0.0	208
492	70.0	5.10	4.11	3.78	0.0	0.0	108
493	47.5	4.40	0.0	0.0	0.0	0.0	208
494	46.5	3.70	0.0	0.0	0.0	0.0	208
495	49.3	3.50	0.0	0.0	0.0	0.0	208
496	91.2	5.20	3.98	3.57	0.0	0.0	108
497	117.0	4.90	4.44	4.34	3.76	1.82	108
498	91.2	4.70	0.0	0.0	0.0	0.0	508
499	73.5	4.60	4.06	3.78	3.21	0.0	108
500	48.2	3.70	0.0	0.0	0.0	0.0	308
501	44.1	4.20	0.0	0.0	0.0	0.0	208
502	89.6	3.90	3.62	3.39	2.96	0.0	108
503	45.1	4.20	0.0	0.0	0.0	0.0	208
504	124.1	3.90	0.0	0.0	0.0	0.0	208
505	46.1	5.30	4.56	4.33	3.90	2.16	108
506	46.0	3.30	0.0	0.0	0.0	0.0	208
508	48.8	4.10	0.0	0.0	0.0	0.0	208
509	46.2	4.50	0.0	0.0	0.0	0.0	308
510	100.7	4.00	0.0	0.0	0.0	0.0	208
511	97.9	3.70	0.0	0.0	0.0	0.0	208
512	117.0	4.00	0.0	0.0	0.0	0.0	208
513	49.8	5.00	3.97	4.06	0.0	0.0	108
514	43.4	4.20	0.0	0.0	0.0	0.0	208
515	47.9	4.30	0.0	0.0	0.0	0.0	208
516	105.4	3.60	0.0	0.0	0.0	0.0	208
517	97.1	3.90	0.0	0.0	0.0	0.0	208
518	114.6	4.30	0.0	0.0	0.0	0.0	208
520	87.8	4.80	0.0	0.0	0.0	0.0	208
521	112.3	4.60	0.0	0.0	0.0	0.0	208
522	95.0	5.50	5.03	4.69	4.32	2.56	108

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
523	95.1	4.70	C.C	C.0	0.0	0.0	20R
524	125.5	3.90	C.0	0.0	0.0	0.0	20R
525	95.6	3.60	0.0	0.0	0.0	0.0	20R
526	47.9	3.70	C.C	0.0	0.0	0.0	20R
527	116.9	4.40	C.C	0.0	0.0	0.0	30R
528	46.5	4.00	0.0	0.0	0.0	0.0	20R
529	100.3	4.80	C.C	0.0	0.0	0.0	20R
530	119.9	4.50	0.0	0.0	0.0	0.0	20R
531	48.0	4.30	C.C	0.0	0.0	0.0	30R
532	114.3	4.00	C.0	0.0	0.0	0.0	20R
533	114.5	4.40	0.0	0.0	0.0	0.0	30R
534	44.1	5.10	4.49	3.94	3.57	0.0	10R
535	64.9	5.10	4.49	4.23	0.0	0.0	10R
537	121.4	3.80	0.0	0.0	0.0	0.0	20R
538	110.8	3.80	0.C	0.0	0.0	0.0	30R
539	45.5	4.80	3.95	3.78	3.18	0.0	10R
540	118.6	4.40	C.C	0.0	0.0	0.0	20R
541	45.5	5.10	4.77	4.63	0.0	0.50	10R
542	103.3	4.00	0.0	0.0	0.0	0.0	20R
543	74.2	4.90	0.0	0.0	0.0	0.0	50R
544	88.3	3.50	C.0	0.0	0.0	0.0	20R
545	117.4	3.60	C.0	0.0	0.0	0.0	30R
546	45.1	4.80	3.61	3.47	3.21	0.0	10R
547	73.2	4.60	0.0	0.0	0.0	0.0	50R
548	120.2	3.60	C.C	0.0	0.0	0.0	20R
549	63.6	3.70	3.27	2.92	0.0	0.0	10R
550	105.6	4.10	C.0	0.0	0.0	0.0	50R
551	124.7	3.70	0.0	0.0	0.0	0.0	20R
552	103.0	3.70	0.C	0.0	0.0	0.0	20R
553	105.6	3.80	0.C	0.0	0.0	0.0	30R
554	122.2	4.50	0.0	3.33	0.0	0.0	15R
555	123.5	3.40	C.C	0.0	0.0	0.0	23R
556	50.6	4.00	0.C	0.0	0.0	0.0	50R
557	120.0	4.70	C.0	0.0	0.0	0.0	30R
558	44.9	5.60	5.47	5.29	4.89	0.52	10R
559	44.9	5.00	5.31	5.28	0.0	0.50	10R
560	120.1	4.20	C.C	0.0	0.0	0.0	20R
561	120.0	4.30	C.0	0.0	0.0	0.0	50R
562	47.1	4.50	3.40	3.32	0.0	0.0	10R
563	45.4	4.00	C.C	0.0	0.0	0.0	30R
564	117.9	3.90	C.0	0.0	0.0	0.0	30R
565	46.9	5.30	C.C	0.0	0.0	0.0	50R
566	120.0	4.50	3.75	3.57	3.72	0.0	10R
567	120.0	4.80	0.C	0.0	0.0	0.0	35R
568	62.2	4.00	C.C	0.0	0.0	0.0	20R
569	48.2	4.00	C.C	0.0	0.0	0.0	20R
570	119.8	4.30	0.C	0.0	0.0	0.0	50R
571	120.1	4.00	0.0	0.0	0.0	0.0	30R
572	45.9	3.90	C.C	0.0	0.0	0.0	30R

KIP C6/C1/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
470	91.0	4.70	C.0	0.0	0.0	0.0	308
471	104.9	4.20	0.C	0.C	0.0	0.0	208
472	46.3	5.20	4.11	4.30	3.62	0.0	108
473	44.4	3.60	0.0	0.0	0.0	0.0	208
474	115.4	3.70	0.0	0.0	0.0	0.0	208
475	118.3	4.70	0.0	0.0	0.0	0.0	208
476	46.0	5.20	3.89	4.05	3.32	0.50	108
477	107.0	3.50	0.0	0.0	0.0	0.0	208
478	42.1	4.00	C.0	0.0	0.0	0.0	208
479	121.3	4.10	0.0	0.0	0.0	0.0	208
482	48.2	4.20	3.70	3.10	0.0	0.0	108
483	116.7	3.70	0.0	0.0	0.0	0.0	208
484	114.3	4.40	C.0	0.0	0.0	0.0	208
485	72.4	3.80	0.C	0.0	0.0	0.0	208
486	121.9	3.90	C.0	0.0	0.0	0.0	208
487	121.5	4.40	C.0	0.0	0.0	0.0	208
488	121.5	3.90	0.0	0.0	0.0	0.0	208
489	121.5	3.40	C.0	0.0	0.0	0.0	208
490	62.7	3.90	0.0	0.0	0.0	0.0	208
491	97.6	3.80	0.0	0.0	0.0	0.0	208
492	70.0	5.10	4.11	3.78	0.0	0.0	108
493	47.5	4.40	C.0	0.0	0.0	0.0	208
494	46.5	3.70	C.0	0.0	0.0	0.0	208
495	49.3	3.50	0.C	0.0	0.0	0.0	208
496	91.2	5.20	3.98	3.57	0.0	0.0	108
497	117.0	4.90	4.44	4.34	3.76	1.82	108
498	91.2	4.70	0.0	0.0	0.0	0.0	508
499	73.5	4.60	4.06	3.78	3.21	0.0	108
500	48.2	3.70	0.0	0.0	0.0	0.0	308
501	44.1	4.20	C.C	0.0	0.0	0.0	208
502	89.6	3.90	3.62	3.39	2.96	0.0	108
503	45.1	4.20	0.C	0.0	0.0	0.0	208
504	124.1	3.90	C.C	0.0	0.0	0.0	208
505	46.1	5.30	4.56	4.33	3.90	2.16	108
506	46.0	3.30	C.C	0.0	0.0	0.0	208
508	48.8	4.10	0.0	0.0	0.0	0.0	208
509	46.2	4.50	0.C	0.0	0.0	0.0	308
510	100.7	4.00	0.0	0.0	0.0	0.0	208
511	97.9	3.70	C.C	0.0	0.0	0.0	208
512	117.0	4.00	C.0	0.0	0.0	0.0	208
513	49.8	5.00	3.97	4.06	0.0	0.0	108
514	43.4	4.20	0.0	0.0	0.0	0.0	208
515	47.9	4.30	0.0	0.0	0.0	0.0	208
516	105.4	3.60	0.C	0.0	0.0	0.0	208
517	97.1	3.90	0.0	0.0	0.0	0.0	208
518	114.6	4.30	0.0	0.0	0.0	0.0	208
520	87.8	4.80	0.0	0.0	0.0	0.0	208
521	112.3	4.60	C.C	0.0	0.0	0.0	208
522	95.0	5.50	5.03	4.69	4.32	2.56	108

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
573	45.6	5.70	7.15	5.88	5.25	0.63	10P
574	45.4	4.40	0.0	0.0	0.0	0.0	30P
575	45.0	3.80	0.0	0.0	0.0	0.0	30P
576	122.0	4.30	0.0	0.0	0.0	0.0	30P
577	45.0	4.10	0.0	0.0	0.0	0.0	20P
578	45.4	4.70	3.77	3.51	0.0	0.0	10P
579	45.4	4.90	4.57	0.0	0.0	0.0	10P
580	45.6	4.30	0.0	0.0	0.0	0.0	30P
581	46.2	3.80	0.0	0.0	0.0	0.0	30P
582	113.2	4.50	0.0	4.21	0.0	0.0	16P
583	119.9	5.50	0.0	0.0	0.0	0.0	30P
584	119.6	5.00	0.0	0.0	0.0	0.0	30P
585	124.2	4.00	0.0	0.0	0.0	0.0	30P
586	120.4	5.00	0.0	0.0	0.0	0.0	30P
587	122.4	4.00	0.0	0.0	0.0	0.0	20P
588	45.0	4.20	0.0	0.0	0.0	0.0	30P
589	45.3	4.20	0.0	0.0	0.0	0.0	23P
590	43.9	3.70	0.0	0.0	0.0	0.0	35P
591	43.1	4.50	3.56	3.56	3.08	1.13	10P
592	119.8	4.00	0.0	0.0	0.0	0.0	30P
593	40.9	3.90	0.0	0.0	0.0	0.0	30P
594	115.4	4.70	4.01	3.61	0.0	1.65	10P
595	118.1	4.20	0.0	0.0	0.0	0.0	20P
596	44.6	5.10	4.11	4.00	0.0	1.59	10P
597	46.9	3.80	0.0	0.0	0.0	0.0	20P
598	120.0	5.50	4.44	4.02	0.0	2.76	10P
599	43.6	3.70	0.0	0.0	0.0	0.0	23P
600	119.1	4.30	0.0	4.45	0.0	0.0	17P
601	118.7	4.40	0.0	0.0	0.0	0.0	20P
602	47.4	4.10	0.0	0.0	0.0	0.0	20P
603	69.3	3.80	0.0	0.0	0.0	0.0	20P
604	102.2	4.50	0.0	0.0	0.0	0.0	23P
605	75.6	5.10	4.26	3.53	0.0	2.13	10P
606	63.9	4.80	3.92	3.35	0.0	3.11	10P
607	46.9	4.10	0.0	0.0	0.0	0.0	30P
608	28.0	4.50	0.0	0.0	0.0	0.0	20P
609	43.0	3.50	0.0	0.0	0.0	0.0	20P
610	93.1	5.20	4.20	3.66	3.43	0.0	10P
611	81.1	5.00	4.20	3.78	0.0	3.12	10P
612	117.1	4.00	0.0	0.0	0.0	0.0	30P
613	44.5	3.30	0.0	0.0	0.0	0.0	20P
614	44.9	5.30	5.13	5.02	4.51	0.20	10P
615	120.2	3.50	0.0	0.0	0.0	0.0	50P
618	93.2	4.10	0.0	0.0	0.0	0.0	20P
619	105.4	4.70	0.0	0.0	0.0	0.0	20P
620	45.0	3.60	0.0	0.0	0.0	0.0	40P
621	46.8	3.60	0.0	0.0	0.0	0.0	32P
622	47.5	3.60	0.0	0.0	0.0	0.0	20P
623	45.4	3.60	0.0	0.0	0.0	0.0	30P

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
624	48.2	4.10	C.C	0.0	0.0	0.0	308
625	43.9	3.40	0.0	0.0	0.0	0.0	508
626	93.2	5.20	0.C	0.0	0.0	0.0	258
627	117.1	3.50	0.0	0.0	0.0	0.0	238
628	43.9	3.60	0.0	0.0	0.0	0.0	208
629	104.8	3.60	C.0	0.0	0.0	0.0	538
630	43.2	4.30	3.60	3.20	0.0	2.64	108
631	46.8	3.50	0.0	0.0	0.0	0.0	308
632	49.1	4.50	0.C	0.0	0.0	0.0	538
633	45.0	3.60	0.0	0.0	0.0	0.0	308
634	105.6	5.00	0.0	0.0	0.0	0.0	308
635	48.9	4.50	0.0	0.0	0.0	0.0	308
636	48.4	3.50	C.0	0.0	0.0	0.0	308
637	44.9	3.60	C.0	0.0	0.0	0.0	208
638	45.6	3.50	0.0	0.0	0.0	0.0	208
639	118.6	3.60	0.0	0.0	0.0	0.0	208
640	118.2	3.90	0.0	0.0	0.0	0.0	208
641	118.2	3.90	C.0	0.0	0.0	0.0	208
642	81.8	4.0C	3.83	3.99	3.26	0.0	108
643	44.4	4.00	3.75	3.27	0.0	0.0	108
644	45.0	5.10	0.C	0.0	0.0	0.0	308
645	47.7	5.10	0.C	0.0	0.0	0.0	308
646	47.7	3.70	0.0	0.0	0.0	0.0	208
647	97.5	3.90	C.0	0.0	0.0	0.0	208
648	120.6	3.60	0.0	0.0	0.0	0.0	308
649	50.4	4.30	3.46	3.61	3.09	2.30	108
650	49.1	3.50	3.16	2.80	0.0	0.0	138
651	49.3	4.90	4.00	3.79	3.39	1.14	108
652	105.3	5.7C	C.0	0.0	0.0	0.0	208
653	43.2	5.20	4.11	4.18	0.0	0.45	108
654	45.6	4.50	C.C	0.0	0.0	0.0	208
655	48.2	4.00	0.0	0.0	0.0	0.0	308
656	99.8	4.80	3.47	3.00	3.00	2.55	168
657	97.5	4.30	0.C	0.0	0.0	0.0	308
658	99.8	*4.50	0.0	0.0	3.39	0.0	138
659	123.5	4.0C	C.0	0.0	0.0	0.0	308
660	46.9	4.10	0.0	0.0	0.0	0.0	208
661	45.5	5.20	4.31	4.20	0.0	0.0	108
662	98.8	4.60	0.0	0.0	0.0	0.0	508
663	73.9	4.20	C.0	0.0	0.0	0.0	308
664	45.6	3.70	0.0	2.89	0.0	0.0	158
665	119.2	4.C0	0.0	0.0	0.0	0.0	328
666	45.7	3.3C	0.0	0.0	0.0	0.0	208
667	44.1	3.80	0.0	0.0	0.0	0.0	308
668	44.9	3.80	0.0	0.0	0.0	0.0	508
669	51.0	3.80	C.0	0.0	0.0	0.0	208
670	61.4	4.00	C.C	0.0	0.0	0.0	208
671	47.5	3.60	3.68	3.13	2.78	0.0	108
672	93.2	5.50	C.0	0.0	0.0	0.0	308

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
673	87.5	3.80	0.0	0.0	0.0	0.0	238
674	120.1	3.60	C.0	0.0	0.0	0.0	308
675	90.3	4.00	C.C	0.0	0.0	0.0	238
676	91.6	4.80	4.47	3.93	3.64	0.0	108
677	106.8	3.60	3.39	3.21	0.0	0.78	168
678	45.0	4.20	4.66	4.26	3.73	0.0	108
679	82.8	6.30	C.0	0.0	0.0	0.0	308
680	110.2	5.20	0.0	0.0	0.0	0.0	208
681	46.2	3.70	C.0	0.0	0.0	0.0	168
682	120.2	3.70	C.C	0.0	0.0	0.0	208
683	125.4	4.40	3.86	3.56	3.45	0.0	108
684	122.5	3.60	0.0	0.0	0.0	0.0	308
685	100.5	3.70	0.C	0.0	0.0	0.0	308
686	114.4	*4.30	0.0	0.0	0.0	0.0	208
687	88.9	5.50	C.0	0.0	0.0	0.0	238
688	89.2	4.20	0.0	0.0	0.0	0.0	328
689	89.0	5.50	C.C	0.0	0.0	0.0	308
690	89.1	5.50	4.31	4.23	0.0	0.65	108
691	44.9	4.60	0.0	0.0	0.0	0.0	308
691	88.7	4.30	0.C	0.0	0.0	0.0	308
692	82.7	5.50	0.0	4.37	0.0	0.0	138
693	77.8	3.70	C.C	0.0	0.0	0.0	258
694	44.4	3.50	0.0	0.0	0.0	0.0	208
696	107.7	4.40	0.0	0.0	0.0	0.0	308
697	54.2	4.40	C.0	0.0	0.0	0.0	508
698	50.8	4.80	C.0	0.0	0.0	0.0	508
699	92.8	6.20	3.61	3.67	3.26	0.0	108
700	102.8	4.30	C.0	0.0	0.0	0.0	308
701	120.2	4.00	C.0	0.0	0.0	0.0	508
702	107.8	5.50	5.31	4.82	4.47	0.0	108
703	105.6	3.80	C.0	0.0	0.0	0.0	308
704	123.4	5.20	5.10	5.16	0.0	0.0	108
705	105.7	4.20	C.C	0.0	0.0	0.0	208
706	123.4	3.70	0.0	0.0	0.0	0.0	208
707	123.9	4.30	0.0	0.0	0.0	0.0	208
708	99.3	*4.50	C.0	0.0	0.0	0.0	208
709	105.8	4.10	0.0	0.0	0.0	0.0	238
710	49.6	4.30	3.74	3.62	2.90	0.45	108
711	74.3	*5.30	4.25	4.11	3.73	1.11	108
712	104.4	4.30	0.C	0.0	0.0	0.0	208
713	45.1	4.50	3.63	3.02	0.0	0.0	138
714	123.6	4.60	0.C	0.0	0.0	0.0	308
715	48.3	3.70	0.C	0.0	0.0	0.0	208
716	73.1	5.50	5.02	4.64	0.0	0.60	108
717	120.6	4.20	0.0	0.0	0.0	0.0	508
718	118.0	4.70	4.08	3.99	3.57	0.0	138
719	118.5	3.60	0.0	0.0	0.0	0.0	208
720	47.0	3.60	0.C	0.0	0.0	0.0	308
721	62.6	3.80	0.0	0.0	0.0	0.0	328

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
722	99.4	3.80	C.C	0.0	0.0	0.0	208
723	45.2	4.80	0.0	0.0	0.0	0.0	308
724	49.2	3.70	C.0	C.0	0.0	0.0	238
725	133.9	3.90	C.0	0.0	0.0	0.0	208
726	72.4	4.10	0.0	0.0	0.0	0.0	308
727	121.4	3.90	C.C	0.0	0.0	0.0	308
728	126.1	4.50	C.0	0.0	0.0	0.0	208
729	104.4	3.90	C.C	0.0	0.0	0.0	308
730	123.5	3.80	C.0	0.0	0.0	0.0	308
731	120.0	3.90	C.C	0.0	0.0	0.0	238
732	94.9	4.40	3.50	3.39	3.19	0.0	108
733	123.5	3.70	C.0	0.0	0.0	0.0	239
734	92.4	4.30	C.C	0.0	0.0	0.0	308
735	46.8	4.00	C.0	0.0	0.0	0.0	208
736	49.3	3.70	C.C	0.0	0.0	0.0	508
737	44.7	4.60	3.86	3.43	2.98	0.91	108
738	49.4	3.90	C.0	0.0	0.0	0.0	308
739	45.9	4.00	C.C	0.0	0.0	0.0	308
741	119.2	*4.80	C.C	0.0	0.0	0.0	308
742	120.6	4.00	C.C	0.0	0.0	0.0	308
743	94.0	4.00	0.C	0.0	0.0	0.0	308
744	73.2	5.70	5.47	5.18	0.0	1.19	108
745	73.9	4.40	C.0	0.0	0.0	0.0	308
746	93.4	3.60	C.C	0.0	0.0	0.0	208
747	123.8	4.10	C.C	0.0	0.0	0.0	308
748	104.4	4.00	0.0	0.0	0.0	0.0	208
749	102.5	4.00	0.C	0.0	0.0	0.0	308
750	102.3	4.90	0.0	0.0	0.0	0.0	308
751	119.8	4.30	0.C	0.0	0.0	0.0	308
752	118.5	5.40	3.77	3.63	0.0	0.0	108
753	101.6	4.70	0.C	0.0	0.0	0.0	358
754	120.2	3.70	C.0	0.0	0.0	0.0	208
755	98.0	5.20	0.0	0.0	0.0	0.0	308
756	45.2	3.40	C.0	0.0	0.0	0.0	258
757	90.2	3.90	0.0	0.0	0.0	0.0	208
758	66.1	5.10	C.C	0.0	0.0	0.0	308
759	120.2	4.00	0.C	0.0	0.0	0.0	238
760	121.5	5.60	C.0	0.0	0.0	0.0	238
761	45.2	5.20	3.86	3.79	3.46	0.0	108
762	115.1	4.90	C.0	0.0	0.0	0.0	508
763	98.0	3.90	C.C	0.0	0.0	0.0	208
764	44.4	4.70	3.77	3.62	3.24	1.14	108
765	124.5	4.80	0.C	0.0	0.0	0.0	208
766	45.1	3.60	0.C	0.0	0.0	0.0	208
767	126.2	4.40	0.0	0.0	0.0	0.0	208
768	105.6	3.60	0.C	0.0	0.0	0.0	238
769	105.6	4.10	C.0	0.0	0.0	0.0	508
770	60.8	3.60	C.C	0.0	0.0	0.0	208
771	114.0	*4.40	0.0	0.0	0.0	0.0	308

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
772	44.4	3.9C	C.0	0.0	0.0	0.0	30R
773	84.9	3.9C	C.0	0.0	0.0	0.0	20R
774	121.9	4.70	2.86	0.0	0.0	0.0	20R
775	113.8	5.4C	4.92	4.79	0.0	0.73	10R
776	44.8	4.8C	3.75	3.73	3.11	0.0	10R
777	54.7	4.1C	C.C	0.0	0.0	0.0	20R
778	123.0	5.1C	C.C	0.0	0.0	0.0	20R
779	54.7	3.6C	C.0	0.0	0.0	0.0	20R
780	52.7	3.9C	C.C	0.0	0.0	0.0	30R
781	101.4	5.00	0.C	0.0	0.0	0.0	20R
782	52.0	4.CC	C.C	0.0	0.0	0.0	20R
783	45.0	4.4C	3.59	3.17	0.0	0.0	13R
784	49.8	4.1C	C.0	0.0	0.0	0.0	30R
785	62.8	5.30	4.43	4.13	0.0	0.0	10R
786	123.2	4.30	0.C	0.0	0.0	0.0	20R
787	54.8	3.70	C.C	0.0	0.0	0.0	50R
788	106.3	3.9C	C.C	0.0	0.0	0.0	20R
789	54.7	4.20	C.C	0.0	0.0	0.0	30R
790	54.9	4.70	3.99	3.43	0.0	1.25	10R
791	70.8	3.70	0.C	0.0	0.0	0.0	30R
792	145.8	4.5C	C.C	0.0	0.0	0.0	10R
793	106.7	4.10	0.0	0.0	0.0	0.0	20R
794	73.6	4.CC	C.0	0.0	0.0	0.0	30R
795	45.3	3.8C	0.C	0.0	0.0	0.0	20R
796	41.0	3.5C	C.C	0.0	0.0	0.0	20R
797	93.2	5.70	4.11	3.88	3.23	0.52	10R
799	48.8	6.CC	5.77	5.70	0.0	0.86	10R
800	47.7	4.20	C.0	0.0	0.0	0.0	30R
801	48.9	3.5C	C.C	0.0	0.0	0.0	20R
802	48.9	4.80	4.74	4.60	4.30	0.90	10R
803	49.8	3.60	C.0	0.0	0.0	0.0	20R
804	48.2	3.70	C.C	0.0	0.0	0.0	30R
805	120.6	3.70	C.0	0.0	0.0	0.0	30R
806	47.9	4.30	C.C	0.0	0.0	0.0	20R
807	48.8	4.30	0.C	0.0	0.0	0.0	30R
808	49.8	3.9C	C.C	0.0	0.0	0.0	20R
809	47.9	3.60	C.0	0.0	0.0	0.0	30R
810	47.9	3.60	0.0	0.0	0.0	0.0	20R
811	46.1	3.6C	C.C	0.0	0.0	0.0	20R
812	48.9	4.30	0.C	0.0	0.0	0.0	20R
813	48.9	4.8C	4.31	4.07	0.0	0.36	10R
814	49.1	4.1C	C.C	0.0	0.0	0.0	30R
815	45.C	4.7C	C.C	0.0	0.0	0.0	30R
816	119.7	3.9C	C.C	0.0	0.0	0.0	20R
817	53.5	3.60	C.C	0.0	0.0	0.0	20R
818	47.5	5.70	4.77	4.66	0.0	2.89	10R
819	108.8	3.60	C.0	0.0	0.0	0.0	20R
820	116.9	*4.20	C.C	0.0	0.0	0.0	20R
821	47.9	4.60	3.2C	3.25	2.88	0.0	16R

KIP 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
822	48.4	4.10	0.0	0.0	0.0	0.0	208
823	120.4	*4.30	0.0	0.0	0.0	0.0	208
824	49.6	3.40	0.0	0.0	0.0	0.0	208
825	48.8	4.70	4.42	4.18	3.77	0.0	108
827	70.6	4.40	0.0	0.0	0.0	0.0	208
828	48.9	5.70	5.81	5.75	0.0	0.53	108
829	48.9	4.80	0.0	0.0	0.0	0.0	308
830	48.6	4.30	0.0	0.0	0.0	0.0	208
831	48.4	3.80	0.0	0.0	0.0	0.0	208
832	48.9	4.70	0.0	0.0	0.0	0.0	208
833	49.1	4.10	0.0	0.0	0.0	0.0	208
834	48.8	4.80	0.0	0.0	0.0	0.0	208
835	49.6	3.70	0.0	0.0	0.0	0.0	208
836	48.9	4.60	3.42	3.69	0.0	0.70	108
837	48.8	4.90	3.93	3.93	0.0	0.95	108
838	106.0	3.40	0.0	0.0	0.0	0.0	208
839	69.4	4.00	3.57	3.27	3.10	0.92	108
840	48.1	3.80	3.99	0.0	0.0	0.0	108
841	47.9	3.70	0.0	0.0	0.0	0.0	208
842	124.1	4.70	0.0	3.73	3.30	0.0	108
843	43.1	3.80	0.0	0.0	0.0	0.0	208
844	122.8	4.60	4.01	3.70	0.0	0.0	108
845	112.1	4.30	0.0	0.0	0.0	0.0	208
846	44.1	4.10	0.0	0.0	0.0	0.0	208
847	108.3	3.70	0.0	0.0	0.0	0.0	208
848	44.4	4.20	3.07	0.0	0.0	0.0	208
849	116.2	3.70	0.0	0.0	0.0	0.0	308
850	44.5	4.10	0.0	0.0	0.0	0.0	208
851	43.9	4.10	0.0	0.0	0.0	0.0	208
852	45.6	4.10	0.0	0.0	0.0	0.0	268
853	96.5	3.90	0.0	0.0	0.0	0.0	208
854	97.3	3.80	0.0	0.0	0.0	0.0	208
855	106.3	4.00	0.0	0.0	0.0	0.0	208
856	117.8	3.70	0.0	0.0	0.0	0.0	208
857	43.5	4.80	3.68	3.59	3.19	0.16	108
858	48.7	4.70	3.62	3.52	3.26	0.0	108
859	45.2	5.70	5.23	5.30	4.84	0.54	108
860	43.9	3.50	0.0	0.0	0.0	0.0	208
861	116.9	3.60	0.0	0.0	0.0	0.0	208
862	122.0	4.60	0.0	0.0	0.0	0.0	208
863	119.5	3.60	0.0	0.0	0.0	0.0	308
864	47.9	4.00	0.0	0.0	0.0	0.0	208
865	93.1	4.50	0.0	0.0	0.0	0.0	208
866	117.8	3.50	0.0	0.0	0.0	0.0	308
867	45.0	4.10	0.0	0.0	0.0	0.0	208
868	45.0	4.30	0.0	0.0	0.0	0.0	308
869	40.9	4.30	0.0	0.0	0.0	0.0	208
870	100.6	4.10	4.27	3.72	0.0	0.0	108
871	48.9	3.80	0.0	0.0	0.0	0.0	208

KIP 04/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
872	121.1	3.80	0.0	0.0	0.0	0.0	208
873	96.7	4.50	0.0	0.0	0.0	0.0	208
874	118.1	4.40	0.0	0.0	0.0	0.0	208
875	96.7	4.90	4.18	3.80	3.60	1.58	108

APPENDIX II-J

BASIC DATA FOR ALQ

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
310	70.4	3.90	0.0	0.0	0.0	0.0	509
311	93.0	3.60	0.0	0.0	0.0	0.0	509
312	96.6	3.70	0.0	0.0	0.0	0.0	509
313	93.0	4.10	0.0	0.0	0.0	0.0	509
314	61.8	3.80	0.0	0.0	0.0	0.0	509
315	112.2	4.10	0.0	0.0	0.0	0.0	509
316	70.5	3.80	0.0	0.0	0.0	0.0	509
317	102.7	3.80	0.0	0.0	0.0	0.0	509
318	102.7	3.70	0.0	0.0	0.0	0.0	509
319	101.8	3.50	0.0	0.0	0.0	0.0	509
320	102.8	3.50	0.0	0.0	0.0	0.0	509
321	107.0	3.70	0.0	0.0	0.0	0.0	509
323	103.6	*5.00	0.0	0.0	0.0	0.0	509
324	113.2	4.20	0.0	0.0	0.0	0.0	539
326	65.8	4.00	0.0	0.0	0.0	0.0	509
327	59.7	3.40	0.0	0.0	0.0	0.0	509
328	61.6	3.50	0.0	0.0	0.0	0.0	509
329	104.2	4.10	0.0	0.0	0.0	0.0	509
330	108.6	3.50	0.0	0.0	0.0	0.0	509
331	61.8	4.00	0.0	0.0	0.0	0.0	509
332	92.7	4.20	0.0	0.0	0.0	0.0	509
333	106.4	3.90	0.0	0.0	0.0	0.0	509
334	115.2	4.80	0.0	0.0	0.0	0.0	509
335	58.0	4.00	3.21	3.03	2.78	0.46	109
336	76.1	3.40	0.0	0.0	0.0	0.0	209
337	69.4	3.60	0.0	0.0	0.0	0.0	209
338	61.6	4.70	0.0	0.0	0.0	0.0	509
339	95.2	5.50	0.0	0.0	0.0	0.0	509
340	60.4	3.80	0.0	0.0	0.0	0.0	309
341	108.6	5.40	4.37	4.27	4.05	1.16	109
342	106.4	4.90	0.0	0.0	0.0	0.0	209
343	108.7	4.90	3.61	3.36	0.0	0.58	109
344	99.4	4.10	0.0	0.0	0.0	0.0	509
345	122.7	4.30	0.0	0.0	0.0	0.0	509
346	108.6	4.70	0.0	0.0	0.0	0.0	509
347	98.2	4.50	0.0	0.0	0.0	0.0	309
348	113.2	4.70	0.0	0.0	0.0	0.0	209
349	71.5	4.40	0.0	0.0	0.0	0.0	309
350	97.6	4.90	3.87	3.58	2.91	4.60	109
351	43.8	4.90	4.31	4.01	0.0	0.0	109
381	75.4	4.60	0.0	0.0	0.0	0.0	309
383	70.4	3.90	0.0	0.0	0.0	0.0	509
384	105.1	4.30	0.0	0.0	0.0	0.0	509
385	96.3	4.40	0.0	0.0	0.0	0.0	509
386	59.5	5.00	3.73	3.67	3.41	0.0	109
388	74.2	4.50	0.0	0.0	0.0	0.0	509
389	68.7	4.10	0.0	0.0	0.0	0.0	209
390	112.4	4.00	0.0	0.0	0.0	0.0	309
391	79.6	3.70	0.0	0.0	0.0	0.0	509

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
392	113.0	3.60	C.0	0.0	0.0	0.0	509
393	64.2	4.30	C.C	0.0	0.0	0.0	51°
394	64.8	3.7C	C.C	0.0	0.0	0.0	309
395	117.9	4.10	C.C	0.0	0.0	0.0	509
396	63.8	4.3C	C.C	0.0	0.0	0.0	509
397	102.0	3.8C	C.C	0.0	0.0	0.0	509
398	84.1	*3.8C	C.0	0.0	0.0	0.0	509
399	69.9	4.5C	C.C	0.0	0.0	0.0	309
402	107.5	4.6C	0.C	0.0	0.0	0.0	509
403	108.0	3.70	C.0	0.0	0.0	0.0	309
404	114.4	3.5C	C.0	0.0	0.0	0.0	509
405	86.0	*4.50	C.C	0.0	0.0	0.0	309
407	108.9	3.8C	0.C	0.0	0.0	0.0	509
408	106.1	3.40	C.C	0.0	0.0	0.0	209
409	85.2	*3.70	C.0	0.0	0.0	0.0	209
410	108.7	4.70	3.67	3.50	3.09	0.0	309
411	64.3	4.10	C.C	0.0	0.0	0.0	109
453	111.0	4.CO	0.C	0.0	0.0	0.0	509
454	93.4	4.70	C.C	0.0	0.0	0.0	209
455	112.5	4.10	C.C	0.0	0.0	0.0	509
470	100.5	4.7C	C.0	0.0	0.0	0.0	309
471	108.C	4.2C	C.C	0.0	0.0	0.0	309
472	70.0	5.20	C.C	0.0	0.0	0.0	209
473	62.3	3.60	C.C	0.0	0.0	0.0	309
474	111.9	3.7C	C.C	0.0	0.0	0.0	509
475	104.4	4.7C	C.C	0.0	0.0	0.0	509
476	69.0	5.2C	C.C	0.0	0.0	0.0	509
477	112.1	3.50	C.C	0.0	0.0	0.0	509
478	59.6	4.0C	0.C	0.0	0.0	0.0	209
479	93.3	4.10	C.C	0.0	0.0	0.0	209
482	74.9	4.20	C.C	0.0	0.0	0.0	209
483	116.3	3.70	0.C	0.0	0.0	0.0	209
484	84.1	4.4C	C.C	0.0	0.0	0.0	309
485	106.2	3.80	0.0	0.0	0.0	0.0	209
486	98.7	3.90	C.C	0.0	0.0	0.0	209
487	111.5	4.40	0.C	0.0	0.0	0.0	209
488	111.7	3.9C	C.0	0.0	0.0	0.0	209
489	111.7	3.4C	C.C	0.C	0.0	0.0	209
490	94.9	3.90	C.C	0.0	0.0	0.0	209
491	102.0	3.80	C.0	0.0	0.0	0.0	209
492	103.0	5.1C	3.01	2.83	0.0	0.0	509
493	72.1	4.40	0.C	0.0	0.0	0.0	509
494	66.3	3.70	C.C	0.0	0.0	0.0	509
495	74.4	3.50	C.0	0.0	0.0	0.0	509
496	109.4	5.2C	0.C	0.0	0.0	0.0	509
497	101.6	4.9C	4.06	3.77	3.35	0.0	309
498	109.3	4.70	0.C	0.0	0.0	0.0	109
499	105.9	4.6C	3.04	2.73	0.0	0.0	309
500	74.9	3.70	0.0	0.0	0.0	0.0	309

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
501	62.6	4.20	0.0	0.0	0.0	0.0	209
502	112.8	3.90	3.08	2.67	0.0	0.0	509
503	66.7	4.20	C.0	0.0	0.0	0.0	509
504	99.9	3.90	0.0	0.0	0.0	0.0	309
505	64.1	5.30	3.31	3.04	2.56	2.87	109
506	62.1	3.30	0.0	0.0	0.0	0.0	209
507	95.1	3.40	0.0	0.0	0.0	0.0	209
508	76.1	4.10	C.0	0.0	0.0	0.0	209
509	64.1	4.50	0.0	0.0	0.0	0.0	509
510	106.0	4.00	C.0	0.0	0.0	0.0	209
511	93.8	3.70	C.0	0.0	0.0	0.0	209
512	90.9	4.00	0.0	0.0	0.0	0.0	209
513	75.5	5.00	0.0	0.0	0.0	0.0	209
514	64.0	4.20	0.C	0.C	0.0	0.0	509
515	65.0	4.30	0.0	0.0	0.0	0.0	509
516	107.0	3.60	0.0	0.0	0.0	0.0	509
517	114.9	3.90	0.0	0.0	0.0	0.0	509
518	107.0	4.30	0.0	0.0	0.0	0.0	509
538	112.9	3.80	C.0	0.0	0.0	0.0	209
539	68.6	4.80	3.18	3.06	2.77	0.0	109
540	92.4	4.40	C.0	0.0	0.0	0.0	509
541	68.6	5.10	3.81	3.75	3.28	0.0	109
542	104.0	4.00	0.0	0.0	0.0	0.0	509
543	107.9	4.90	2.99	2.69	2.67	0.0	509
544	110.1	3.50	0.C	0.0	0.0	0.0	309
545	92.9	3.60	0.0	0.0	0.0	0.0	209
546	61.9	4.80	C.0	0.0	0.0	0.0	209
547	105.8	4.60	0.0	0.0	0.0	0.0	209
548	111.0	3.60	0.0	0.0	0.0	0.0	509
550	109.0	4.10	0.0	0.0	0.0	0.0	209
551	101.7	3.70	C.0	0.0	0.0	0.0	509
552	106.1	3.70	0.0	0.0	0.0	0.0	309
553	109.0	3.80	C.0	0.0	0.0	0.0	309
554	101.3	4.50	0.0	0.0	0.0	0.0	509
555	96.2	3.40	0.0	0.0	0.0	0.0	359
556	77.5	4.00	0.0	0.0	0.0	0.0	509
557	115.0	4.70	C.0	0.0	0.0	0.0	309
558	61.8	5.60	4.29	4.02	0.0	0.0	109
559	61.8	5.00	4.62	4.01	0.0	0.0	139
560	115.1	4.20	C.0	3.10	0.0	0.0	159
561	97.0	4.30	2.70	2.48	2.56	0.0	179
563	62.5	4.00	C.0	0.0	0.0	0.0	209
564	95.8	3.90	C.0	0.0	0.0	0.0	309
565	60.6	5.30	3.96	3.40	0.0	0.0	109
566	98.1	4.50	C.0	0.0	0.0	0.0	509
567	115.0	4.80	C.0	0.0	0.0	0.0	209
568	95.7	4.00	C.C	0.0	0.0	0.0	209
569	72.7	4.00	C.0	0.0	0.0	0.0	209
570	98.0	4.30	C.0	0.0	0.0	0.0	509

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
571	115.1	4.00	0.0	0.0	0.0	0.0	309
572	69.9	3.90	0.0	0.0	0.0	0.0	309
573	68.6	5.70	0.0	0.0	0.0	0.0	409
574	68.7	4.40	0.0	0.0	0.0	0.0	209
575	68.2	3.80	0.0	0.0	0.0	0.0	309
576	113.9	4.30	0.0	0.0	0.0	0.0	209
577	68.2	4.10	0.0	0.0	0.0	0.0	209
578	68.6	4.70	0.0	0.0	0.0	0.0	309
579	68.7	4.90	4.10	4.11	3.69	0.0	109
580	68.6	4.30	0.0	0.0	0.0	0.0	309
581	69.4	3.80	0.0	0.0	0.0	0.0	509
592	97.5	4.00	0.0	0.0	0.0	0.0	509
593	60.3	3.90	0.0	0.0	0.0	0.0	509
696	106.2	4.40	0.0	0.0	0.0	0.0	309
697	86.2	4.40	4.76	4.30	0.0	0.0	109
698	77.5	4.80	0.0	3.62	3.25	0.0	109
699	95.0	6.20	3.89	3.33	0.0	0.86	109
700	105.9	4.30	0.0	0.0	0.0	0.0	309
701	111.0	4.00	0.0	0.0	0.0	0.0	309
702	110.0	5.50	5.33	5.14	4.41	0.0	109
703	109.0	3.80	0.0	0.0	0.0	0.0	309
705	108.1	4.20	0.0	0.0	0.0	0.0	309
706	101.4	3.70	0.0	0.0	0.0	0.0	239
707	97.0	4.30	0.0	0.0	0.0	0.0	209
708	116.4	*4.50	0.0	0.0	0.0	0.0	209
709	106.9	4.10	0.0	0.0	0.0	0.0	239
710	76.1	4.30	3.79	2.93	0.0	3.18	139
711	107.0	*5.30	0.0	0.0	0.0	0.0	139
712	108.1	4.30	0.0	0.0	0.0	0.0	309
713	64.6	4.50	0.0	0.0	0.0	0.0	209
714	96.6	4.60	0.0	0.0	0.0	0.0	209
715	72.5	3.70	0.0	0.0	0.0	0.0	209
716	105.6	5.50	4.20	4.34	3.84	2.44	109
717	92.0	4.20	0.0	0.0	0.0	0.0	239
718	113.1	4.70	0.0	3.65	0.0	0.0	139
719	94.4	3.60	0.0	0.0	0.0	0.0	209
720	69.2	3.60	0.0	0.0	0.0	0.0	309
721	81.8	3.80	0.0	0.0	0.0	0.0	329
722	104.0	3.80	0.0	0.0	0.0	0.0	209
723	62.6	4.80	0.0	0.0	0.0	0.0	309
724	74.6	3.70	0.0	0.0	0.0	0.0	239
725	127.0	3.90	0.0	0.0	0.0	0.0	209
726	106.2	4.10	0.0	0.0	0.0	0.0	309
727	113.2	3.90	0.0	0.0	0.0	0.0	209
728	100.4	4.50	0.0	0.0	0.0	0.0	209
729	108.1	3.90	0.0	0.0	0.0	0.0	309
730	96.2	3.80	0.0	0.0	0.0	0.0	309
731	106.4	3.90	0.0	0.0	0.0	0.0	239
732	117.3	4.40	0.0	0.0	0.0	0.0	309

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
733	96.2	3.70	0.0	0.0	0.0	0.0	239
734	121.2	4.30	0.0	0.0	0.0	0.0	209
735	73.7	4.00	0.0	0.0	0.0	0.0	209
736	75.5	3.70	0.0	0.0	0.0	0.0	209
737	64.7	4.60	3.50	3.45	0.0	0.91	109
738	75.4	3.90	0.0	0.0	0.0	0.0	309
741	91.6	*4.80	0.0	0.0	0.0	0.0	309
742	110.7	4.00	0.0	0.0	0.0	0.0	309
743	101.5	4.00	0.0	0.0	0.0	0.0	309
744	105.7	5.70	5.00	4.70	0.0	6.86	109
745	106.6	4.40	0.0	0.0	0.0	0.0	309
746	86.4	3.60	0.0	0.0	0.0	0.0	239
747	99.9	4.10	0.0	0.0	0.0	0.0	309
748	108.1	4.00	0.0	0.0	0.0	0.0	239
749	108.0	4.00	0.0	0.0	0.0	0.0	209
750	109.1	4.90	0.0	0.0	0.0	0.0	309
751	92.4	4.20	0.0	0.0	0.0	0.0	509
752	91.0	5.40	0.0	0.0	0.0	0.0	509
753	90.1	4.70	0.0	0.0	0.0	0.0	359
754	111.0	3.70	0.0	0.0	0.0	0.0	509
755	92.9	5.20	0.0	0.0	0.0	0.0	509
756	65.6	3.40	0.0	0.0	0.0	0.0	509
757	109.6	3.90	0.0	0.0	0.0	0.0	209
758	79.5	5.10	0.0	0.0	0.0	0.0	509
759	92.7	4.00	0.0	0.0	0.0	0.0	509
760	113.9	5.60	0.0	0.0	0.0	0.0	239
761	65.8	5.20	3.72	3.69	0.0	0.0	109
762	84.7	4.90	4.48	3.61	0.0	12.81	109
763	91.7	3.90	0.0	0.0	0.0	0.0	239
764	63.9	4.70	0.0	0.0	0.0	0.0	509
766	62.6	3.60	0.0	0.0	0.0	0.0	509
767	99.6	4.40	0.0	0.0	0.0	0.0	409
771	83.7	*4.40	0.0	0.0	0.0	0.0	409
772	64.4	3.90	0.0	0.0	0.0	0.0	309
773	15.4	3.90	0.0	0.0	0.0	0.0	209
774	112.9	4.70	0.0	0.0	0.0	0.0	209
775	108.2	5.40	5.27	4.73	5.03	1.97	109
776	62.9	4.80	3.38	3.29	0.0	1.09	109
777	86.9	4.10	0.0	0.0	0.0	0.0	209
778	97.4	5.10	4.45	4.21	3.63	1.77	109
779	87.1	3.60	0.0	0.0	0.0	0.0	209
780	77.2	3.90	0.0	0.0	0.0	0.0	309
781	105.6	5.00	4.18	3.96	3.48	0.0	109
782	76.6	4.00	0.0	0.0	0.0	0.0	209
783	64.1	4.40	0.0	0.0	0.0	0.0	309
784	75.5	4.10	0.0	0.0	0.0	0.0	209
785	93.8	5.30	0.0	0.0	0.0	0.0	009
786	97.6	4.30	0.0	0.0	0.0	0.0	209
787	87.2	3.70	0.0	0.0	0.0	0.0	209

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
788	110.0	3.9C	0.0	0.0	0.0	0.0	20C
789	87.0	4.20	C.C	0.0	0.0	0.0	30C
790	87.2	4.70	0.0	0.0	0.0	0.0	00C
791	92.5	3.7C	0.0	0.0	0.0	0.0	30C
792	105.2	4.50	0.0	0.0	0.0	0.0	30C
793	107.9	4.1C	C.0	0.C	0.0	0.0	20C
794	105.9	4.CC	C.C	0.0	0.0	0.0	30C
795	67.7	3.8C	C.C	0.0	0.0	0.0	00C
796	59.4	3.50	C.0	0.C	0.0	0.0	00C
797	95.2	5.70	4.29	3.68	0.0	0.0	10C
799	74.8	6.00	5.64	5.19	0.0	0.92	10C
800	73.8	4.20	C.C	0.0	0.0	0.0	20C
801	75.5	3.50	C.C	0.0	0.0	0.0	20C
802	75.0	4.8C	C.C	0.C	0.0	0.0	30C
803	75.5	3.60	C.0	0.0	0.0	0.0	30C
804	74.9	3.70	C.C	0.0	0.0	0.0	20C
805	92.8	3.70	0.C	0.0	0.0	0.0	30C
806	73.2	4.30	0.C	0.0	0.0	0.0	30C
807	74.9	4.30	0.0	0.0	0.0	0.0	20C
808	75.5	3.90	C.C	0.0	0.0	0.0	30C
809	73.2	3.60	C.C	0.0	0.0	0.0	30C
810	73.2	3.6C	0.0	C.0	0.0	0.0	20C
811	73.1	3.6C	0.C	0.0	0.0	0.0	20C
812	74.9	4.30	0.C	0.0	0.0	0.0	20C
813	75.0	4.8C	3.84	3.41	0.0	0.0	10C
814	75.0	4.10	C.C	0.0	0.0	0.0	30C
815	64.7	4.70	C.0	0.0	0.0	0.0	20C
816	92.1	3.9C	C.C	0.0	0.0	0.0	20C
817	77.1	3.60	0.0	0.0	0.0	0.0	20C
818	74.3	5.7C	4.30	3.65	0.0	1.31	10C
819	110.9	3.60	0.0	0.0	0.0	0.0	20C
820	91.0	*4.20	0.0	0.0	0.0	0.0	30C
821	73.2	4.6C	0.0	0.0	0.0	0.0	20C
822	74.4	4.1C	C.0	0.0	0.0	0.0	20C
823	91.7	*4.30	3.94	3.42	0.0	4.85	10C
824	76.1	3.40	C.C	0.0	0.0	0.0	20C
825	75.0	4.70	3.88	3.65	0.0	0.50	10C
826	97.6	4.7C	C.C	0.C	0.0	0.0	20C
827	59.4	4.40	4.05	3.82	0.0	0.0	10C
828	75.0	5.70	5.77	5.25	0.0	0.89	10C
829	75.0	4.80	C.C	0.0	0.0	0.0	30C
830	73.8	4.30	C.C	0.0	0.0	0.0	23C
831	74.4	3.8C	C.C	0.0	0.0	0.0	20C
832	75.0	4.70	C.C	0.0	0.0	0.0	20C
833	75.0	4.1C	C.0	0.0	0.0	0.0	20C
834	74.9	4.80	C.C	0.0	0.0	0.0	23C
835	76.1	3.7C	C.C	0.0	0.0	0.0	20C
836	75.0	4.6C	0.0	0.0	0.0	0.0	20C
837	75.0	4.90	3.74	3.04	0.0	0.0	10C

ALQ 06/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
838	106.9	3.40	0.0	0.0	0.0	0.0	209
839	57.8	4.00	4.11	3.80	3.37	0.53	109
840	75.5	3.80	0.0	0.0	0.0	0.0	209
841	73.2	3.70	0.0	0.0	0.0	0.0	209
842	97.8	4.70	4.10	3.69	0.0	0.0	109
843	66.5	3.80	0.0	0.0	0.0	0.0	209
844	97.7	4.60	4.37	3.82	3.39	0.65	109
845	113.8	4.30	0.0	0.0	0.0	0.0	209
846	66.6	4.10	0.0	0.0	0.0	0.0	209
847	113.0	3.70	0.0	0.0	0.0	0.0	209
848	63.2	4.20	0.0	0.0	0.0	0.0	209
849	86.3	3.70	0.0	0.0	0.0	0.0	209
850	61.4	4.10	0.0	0.0	0.0	0.0	209
851	61.8	4.10	0.0	0.0	0.0	0.0	209
852	68.8	4.10	0.0	0.0	0.0	0.0	209
853	117.9	3.90	0.0	0.0	0.0	0.0	209
854	108.3	3.80	0.0	0.0	0.0	0.0	209
855	110.0	4.00	0.0	0.0	0.0	0.0	209
856	93.4	3.70	0.0	0.0	0.0	0.0	209
857	63.1	4.80	0.0	0.0	0.0	0.0	209
858	74.2	4.70	0.0	0.0	0.0	0.0	209
859	65.1	5.70	0.0	5.07	4.61	0.54	109
860	63.6	3.50	0.0	3.63	0.0	0.0	169
862	113.7	4.60	0.0	0.0	0.0	0.0	209
863	93.5	3.60	0.0	0.0	0.0	0.0	309
864	73.2	4.00	0.0	0.0	0.0	0.0	309
865	95.0	4.50	0.0	0.0	0.0	0.0	309
866	90.0	3.50	0.0	0.0	0.0	0.0	309
867	68.2	4.10	3.39	2.93	0.0	0.0	109
868	61.9	4.30	0.0	0.0	0.0	0.0	309
869	59.5	4.30	0.0	0.0	0.0	0.0	209
870	114.2	4.10	0.0	0.0	0.0	0.0	209
871	75.5	3.80	0.0	0.0	0.0	0.0	209
872	108.9	3.80	0.0	0.0	0.0	0.0	209
873	110.1	4.50	0.0	0.0	0.0	0.0	209
874	92.8	4.40	0.0	0.0	0.0	0.0	209
875	110.2	4.90	0.0	0.0	0.0	0.0	309

APPENDIX II-K
BASIC DATA FOR ZLP

ZLP 12/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
739	134.0	4.00	C.C	0.0	0.0	0.0	2010
742	123.1	4.00	0.0	0.0	0.0	0.0	3010
743	144.4	4.00	0.0	0.0	0.0	0.0	3010
744	168.3	5.70	0.0	4.94	4.53	0.0	1010
745	169.2	4.40	C.C	0.0	0.0	0.0	3010
746	125.0	3.60	C.C	0.0	0.0	0.0	2010
747	106.0	4.10	C.C	0.0	0.0	0.0	3010
748	140.1	4.00	0.0	0.0	0.0	0.0	5010
749	142.3	4.00	0.C	0.0	0.0	0.0	2010
750	143.8	4.90	C.C	0.0	0.0	0.0	3010
751	100.6	4.30	0.C	3.41	2.07	0.0	1310
752	100.3	5.40	C.C	0.0	0.0	0.0	3010
753	120.6	4.70	0.C	0.0	0.0	0.0	5010
755	128.5	5.20	C.C	0.0	0.0	0.0	5010
763	126.9	3.90	C.C	0.0	0.0	0.0	2010
764	126.9	4.70	0.0	3.67	0.0	0.59	1610
765	104.0	4.80	3.66	3.58	0.0	0.0	1310
767	102.5	4.40	0.C	0.0	0.0	0.0	2010
768	139.7	3.60	C.C	0.0	0.0	0.0	2310
769	139.7	4.10	C.C	0.0	0.0	0.0	2310
770	120.2	3.60	C.0	0.0	0.0	0.0	2310
771	95.2	*4.40	C.C	0.0	0.0	0.0	2010
772	127.4	3.90	C.C	0.0	0.0	0.0	5010
773	95.0	3.90	C.0	0.0	0.0	0.0	5010
774	124.0	4.70	C.C	0.0	0.0	0.0	5010
775	128.6	5.40	5.39	4.89	5.21	0.80	1010
776	125.9	4.80	C.C	0.0	0.0	0.0	2010
777	148.8	4.10	0.0	0.0	0.0	0.0	2010
778	103.6	5.10	C.C	4.16	0.0	1.58	1010
779	148.9	3.60	C.0	0.0	0.0	0.0	2010
780	140.2	3.90	C.0	0.0	0.0	0.0	5010
781	140.8	5.00	C.0	0.0	0.0	0.0	5010
782	139.6	4.00	C.0	0.0	0.0	0.0	5010
783	127.1	4.40	C.0	0.0	0.0	0.0	5010
784	138.5	4.10	0.0	0.0	0.0	0.0	5010
785	156.5	5.30	C.0	0.0	0.0	0.0	0010
786	103.7	4.30	C.C	0.0	0.0	0.0	2010
787	149.0	3.70	0.C	0.0	0.0	0.0	2010
788	140.C	3.90	0.0	0.0	0.0	0.0	2010
789	148.9	4.20	C.C	0.0	0.0	0.0	3010
790	149.0	4.70	C.C	0.0	0.0	0.0	0010
791	153.8	3.70	C.0	0.0	0.0	0.0	3010
792	82.9	4.50	C.C	0.0	0.0	0.0	3010
793	137.1	4.10	C.0	0.0	0.0	0.0	2010
794	168.6	4.00	0.0	0.0	0.0	0.0	3010
795	130.7	3.80	C.C	0.0	0.0	0.0	0010
796	122.4	3.50	C.0	0.0	0.0	0.0	0010
797	137.0	5.70	4.10	3.65	0.0	0.0	1010
799	137.7	6.00	5.83	5.63	5.24	0.97	1010

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
800	136.6	4.20	C.0	0.0	0.0	0.0	3010
801	138.3	3.50	0.0	0.0	0.0	0.0	2010
802	137.8	4.9C	4.79	4.11	3.97	0.51	1010
803	138.5	3.60	0.0	0.0	0.0	0.0	3010
804	137.7	3.7C	C.0	0.0	0.0	0.0	3010
805	100.2	3.7C	C.0	0.0	0.0	0.0	3010
806	136.1	4.30	C.0	0.0	0.0	0.0	3010
807	137.8	4.3C	C.C	0.0	0.0	0.0	2010
808	138.5	3.90	C.C	0.0	0.0	0.0	3010
809	136.1	3.60	C.C	0.0	0.0	0.0	3010
810	136.1	3.60	C.C	0.0	0.0	0.0	3010
811	135.8	3.6C	C.C	0.0	0.0	0.0	2010
812	137.8	4.30	C.C	0.0	0.0	0.0	3010
813	137.8	4.80	C.C	0.0	0.0	0.0	5010
814	137.8	4.10	0.0	0.0	0.0	0.0	3010
815	127.7	4.70	C.C	0.0	0.0	0.0	3010
816	100.3	3.90	C.0	0.0	0.0	0.0	2010
817	140.1	3.6C	C.C	0.0	0.0	0.0	2010
818	137.0	5.70	C.C	0.0	0.0	0.0	2410
819	137.9	3.6C	C.C	0.0	0.0	0.0	2010
820	102.4	*4.2C	C.C	0.0	0.0	0.0	2010
821	136.1	4.60	0.0	0.0	0.0	0.0	2010
822	137.2	4.1C	0.C	0.C	0.0	0.0	2010
823	98.8	*4.3C	0.0	0.0	0.0	0.0	5010
824	139.0	3.40	0.C	0.0	0.0	0.0	2010
825	137.8	4.70	4.12	3.91	3.34	0.68	1010
826	103.7	4.7C	0.0	0.0	0.0	0.0	2010
827	110.4	4.40	C.C	0.0	0.0	0.0	5010
828	137.9	5.70	5.77	5.64	5.01	0.46	1010
829	137.8	4.80	0.C	0.0	0.0	0.0	3010
830	136.7	4.30	C.C	0.0	0.0	0.0	2310
831	137.2	3.80	C.0	0.0	0.0	0.0	3010
832	137.8	4.7C	0.C	0.0	0.0	0.0	3010
833	137.8	4.10	C.0	0.0	0.0	0.0	2310
834	137.8	4.80	C.C	0.0	0.0	0.0	2310
835	139.0	3.70	0.C	0.0	0.0	0.0	2010
836	137.8	4.6C	C.C	0.0	0.0	0.0	2010
837	137.8	4.90	4.05	3.42	0.0	0.0	1010
838	136.8	3.4C	C.C	0.0	0.0	0.0	2010
839	109.4	4.00	3.74	3.59	3.26	1.60	1010
840	138.2	3.80	C.C	0.0	0.0	0.0	3010
841	136.1	3.7C	C.C	0.0	0.0	0.0	2010
842	102.7	4.7C	3.83	3.58	3.29	0.0	1010
843	129.4	3.80	C.C	0.0	0.0	0.0	2010
844	104.2	4.60	C.C	0.0	0.0	0.0	2010
845	136.8	4.30	C.C	0.0	0.0	0.0	2010
846	129.6	4.10	C.C	0.0	0.0	0.0	2010
847	140.8	3.70	C.C	0.0	0.0	0.0	2010
848	126.2	4.20	C.C	0.0	0.0	0.0	2010

ZLP 12/01/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LQ/LR RATIO	COMMENT
849	96.0	3.70	0.0	0.0	0.0	0.0	2010
850	124.4	4.10	0.0	0.0	0.0	0.0	2010
851	124.8	4.10	0.0	0.0	0.0	0.0	2010
852	131.7	4.10	0.0	0.0	0.0	0.0	2010
853	161.7	3.90	0.0	0.0	0.0	0.0	2010
854	149.2	3.80	0.0	0.0	0.0	0.0	2010
855	140.0	4.00	0.0	0.0	0.0	0.0	2010
856	104.8	3.70	0.0	0.0	0.0	0.0	5010

APPENDIX II-L

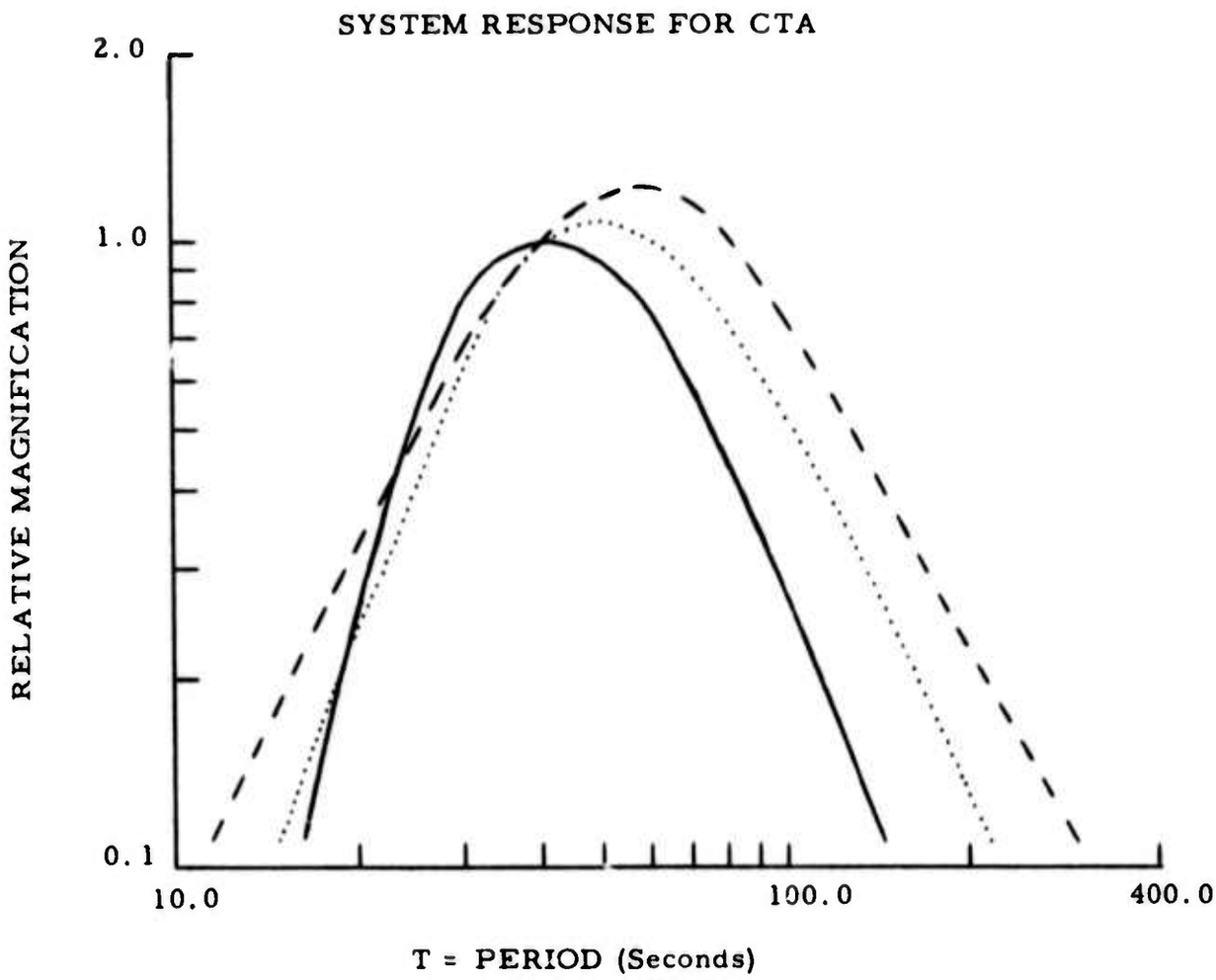
BASIC DATA FOR MAT

MAT 12/22/72 - 12/31/72

EVENT NO.	DISTANCE (DEGREES)	MB	MS T=20SEC	MS T=30SEC	MS T=40SEC	LG/LR RATIO	COMMENT
852	18.0	4.10	C.0	0.0	0.0	0.0	2011
853	39.8	3.90	C.0	0.0	0.0	0.0	5011
854	42.3	3.80	C.0	0.0	0.0	0.0	2011
855	52.6	4.00	C.C	0.0	0.0	0.0	3011
856	80.2	3.70	C.C	0.0	0.0	0.0	5011
857	23.9	4.80	C.C	3.32	0.0	0.0	1011
858	12.9	4.70	3.35	5.12	0.0	0.0	1011
859	22.1	5.70	5.31	5.25	0.0	0.72	1011
860	23.4	3.50	C.C	0.0	0.0	0.0	2011
861	61.4	3.60	C.0	0.0	0.0	0.0	2011
862	70.7	4.60	0.C	0.0	0.0	0.0	2011
863	82.6	3.60	C.C	0.0	0.0	0.0	2011
864	13.5	4.00	C.C	0.0	0.0	0.0	3011
865	44.5	4.50	C.0	0.0	0.0	0.0	2011
866	83.8	3.50	C.C	0.0	0.0	0.0	3011
867	18.5	4.10	3.55	0.0	0.0	0.0	1011
868	25.6	4.30	C.0	0.0	0.0	0.0	5011
869	27.4	4.30	C.C	0.0	0.0	0.0	2011
870	44.4	4.10	0.0	0.0	0.0	0.0	2011
871	11.1	3.80	C.C	0.0	0.0	0.0	5011
872	71.8	3.80	C.0	0.0	0.0	0.0	5011
873	41.0	4.50	3.71	0.0	0.0	0.0	1011
874	81.2	4.40	C.C	0.0	0.0	0.0	2011
875	41.0	4.90	3.55	3.36	3.12	0.0	1011

APPENDIX II-M

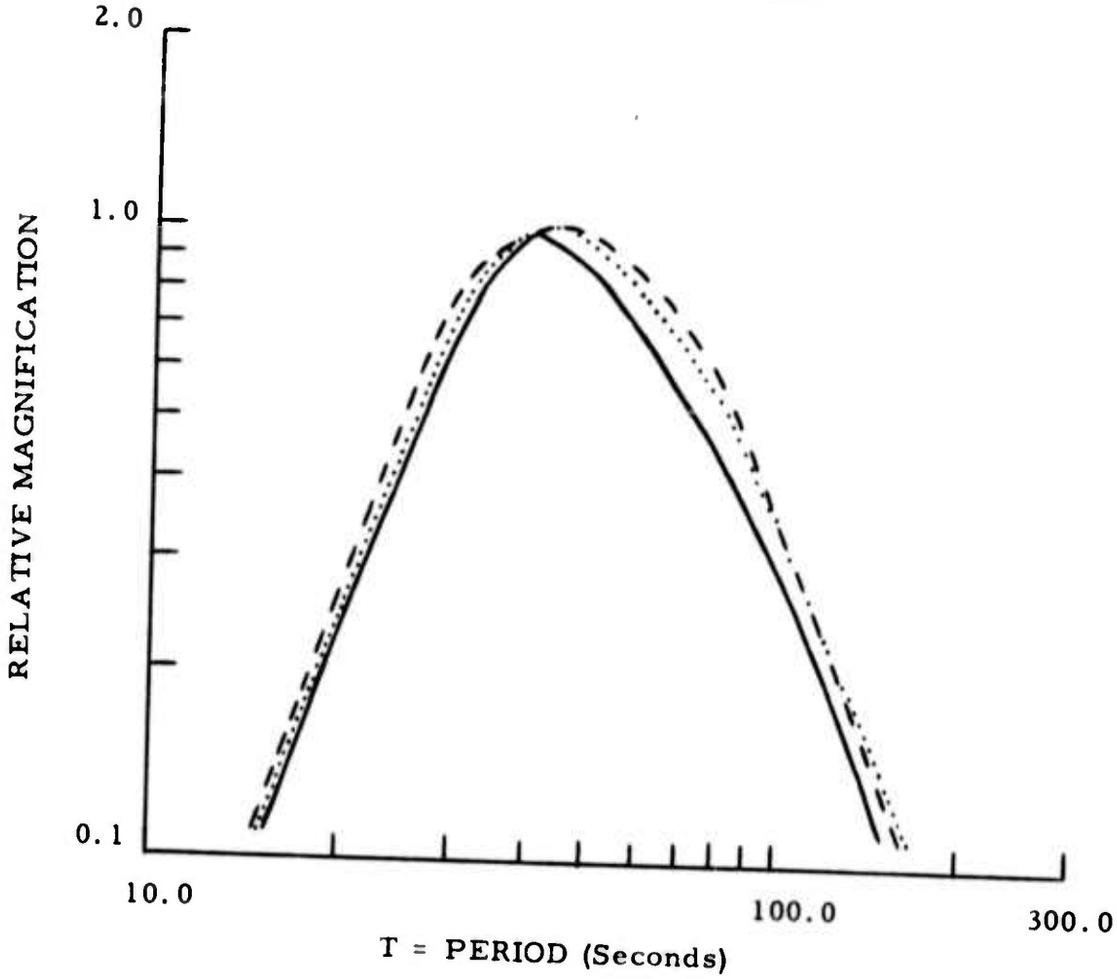
VLPE SYSTEM RESPONSE CURVES



Gain at T = 40.0 Sec.

———	Z	0.721 mμ/count
- - -	N	1.48 mμ/count
. . . .	E	1.28 mμ/count

SYSTEM RESPONSE FOR CHG

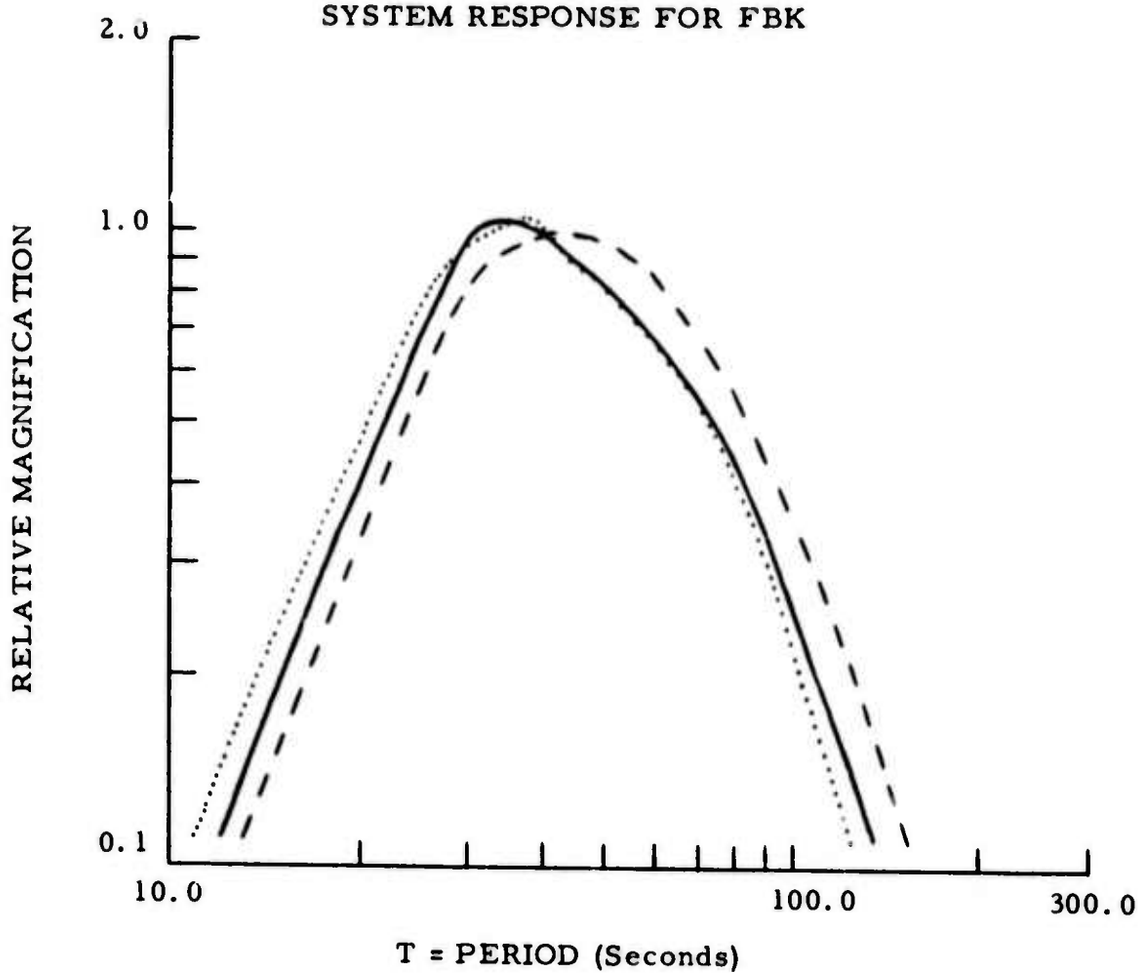


Gain at T = 40.0 Sec.

——— Z 0.806 mμ/count

- - - N 1.14 mμ/count

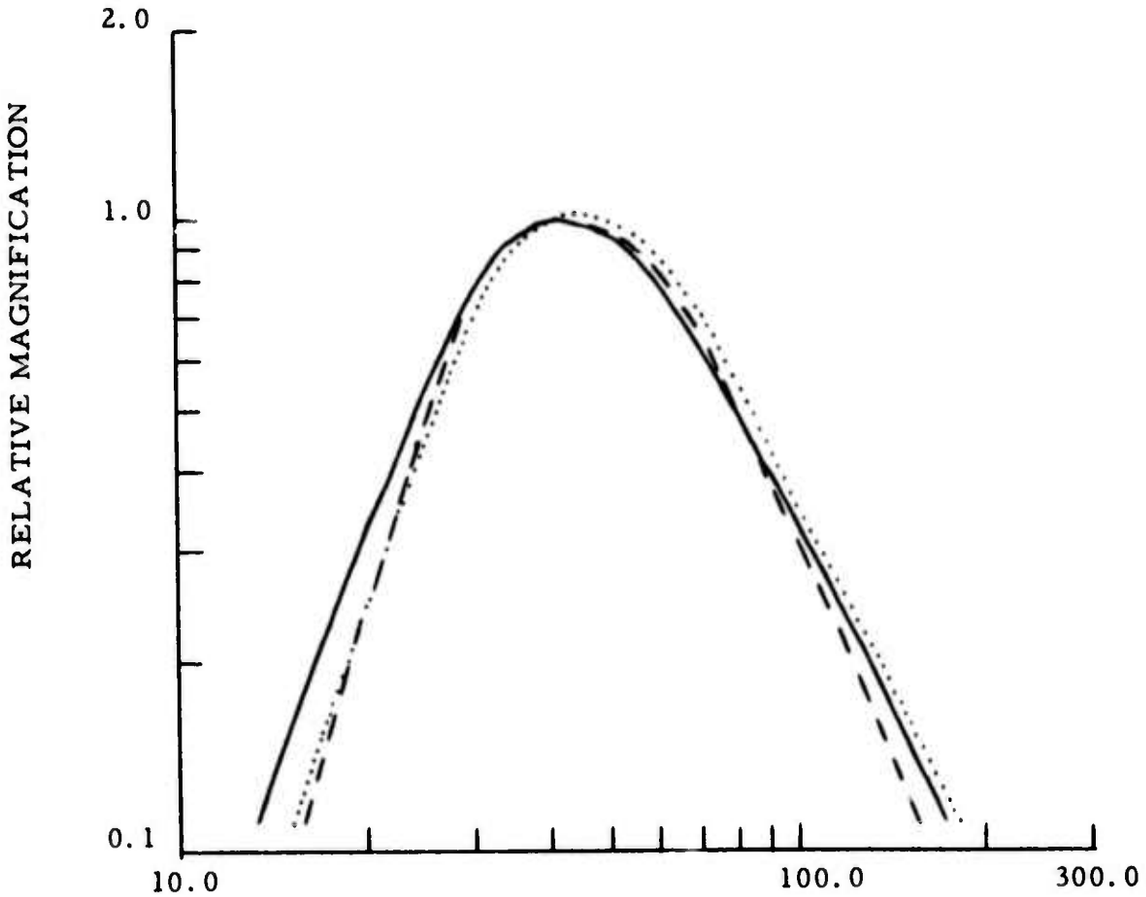
. . . . E 0.806 mμ/count



Gain at T = 40.0 Sec.

——	Z	1.33 mμ/count
- - -	N	1.64 mμ/count
. . . .	E	1.26 mμ/count

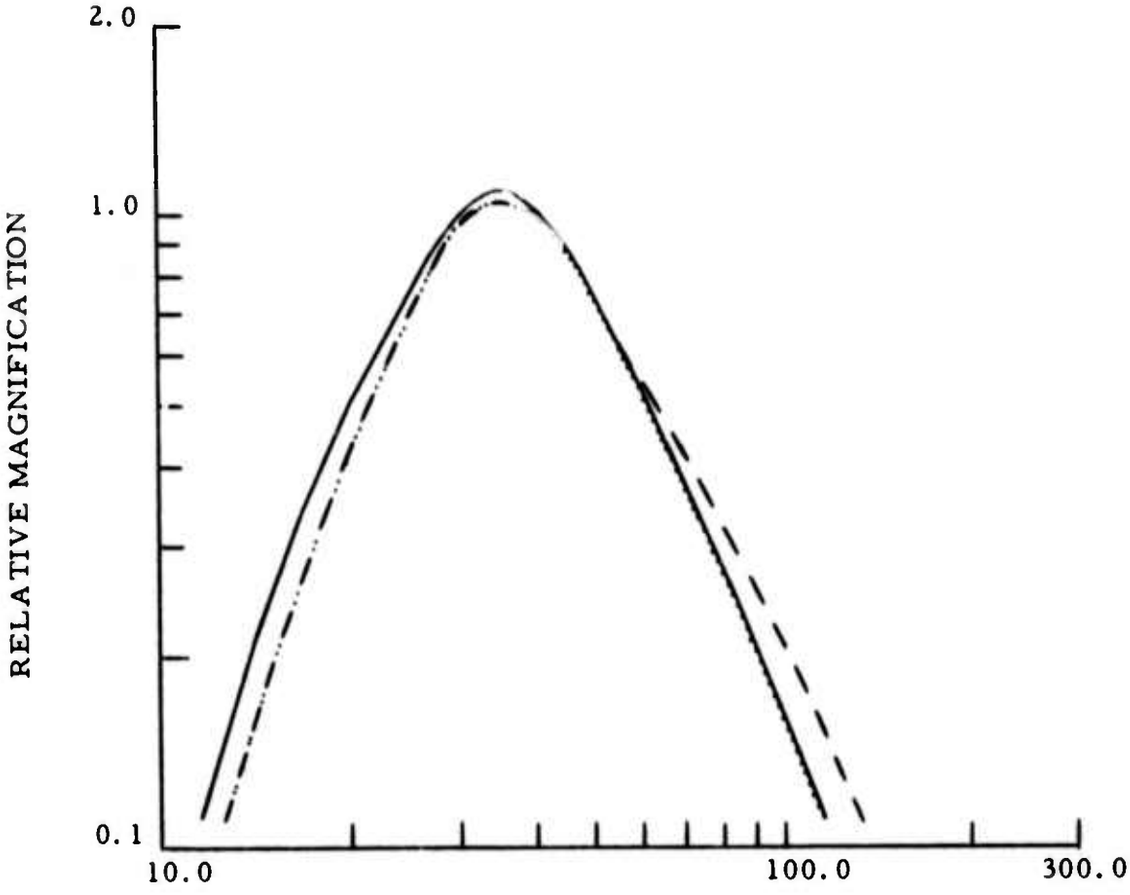
SYSTEM RESPONSE FOR TLO



Gain at T = 40.0 Sec.

———	Z	0.708 mμ/count
- - -	N	0.625 mμ/count
. . . .	E	0.584 mμ/count

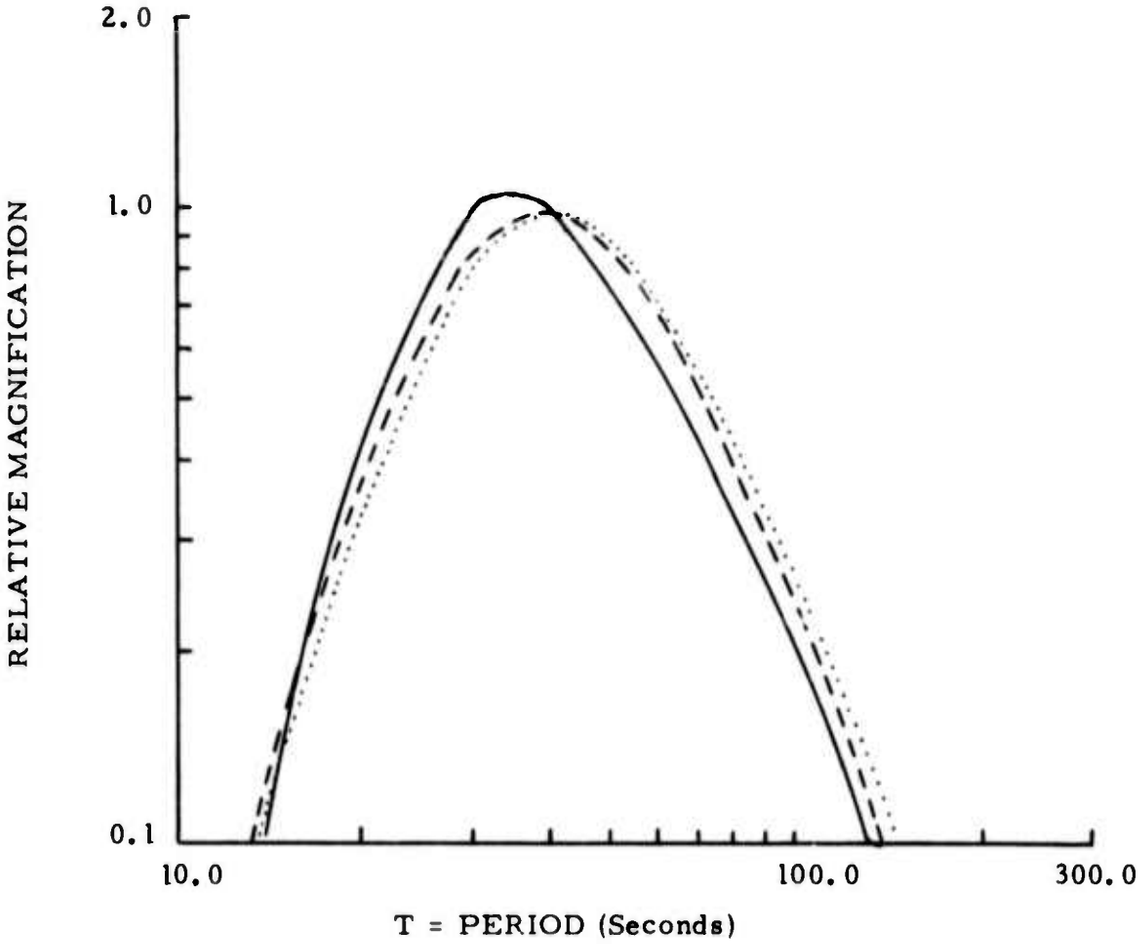
SYSTEM RESPONSE FOR EIL
PRIOR TO NOVEMBER, 1972



Gain at T = 40.0 Sec.

———	Z	0.794 mμ/count
- - -	N	1.34 mμ/count
. . . .	E	1.75 mμ/count

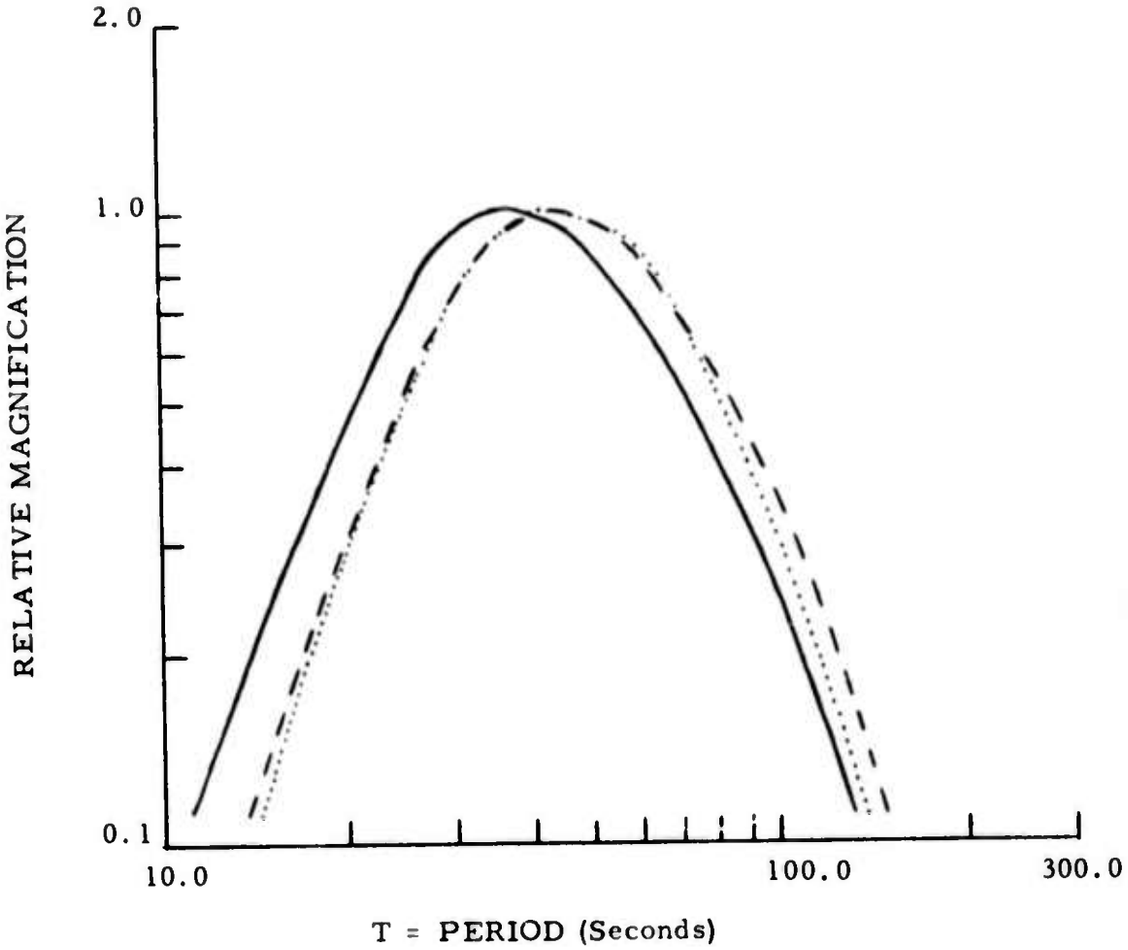
SYSTEM RESPONSE FOR EIL
NOVEMBER 1972 TO PRESENT



Gain at T = 40.0 Sec.

____	Z	1.701 mμ /count
- - -	N	1.441 mμ /count
. . . .	E	1.774 mμ /count

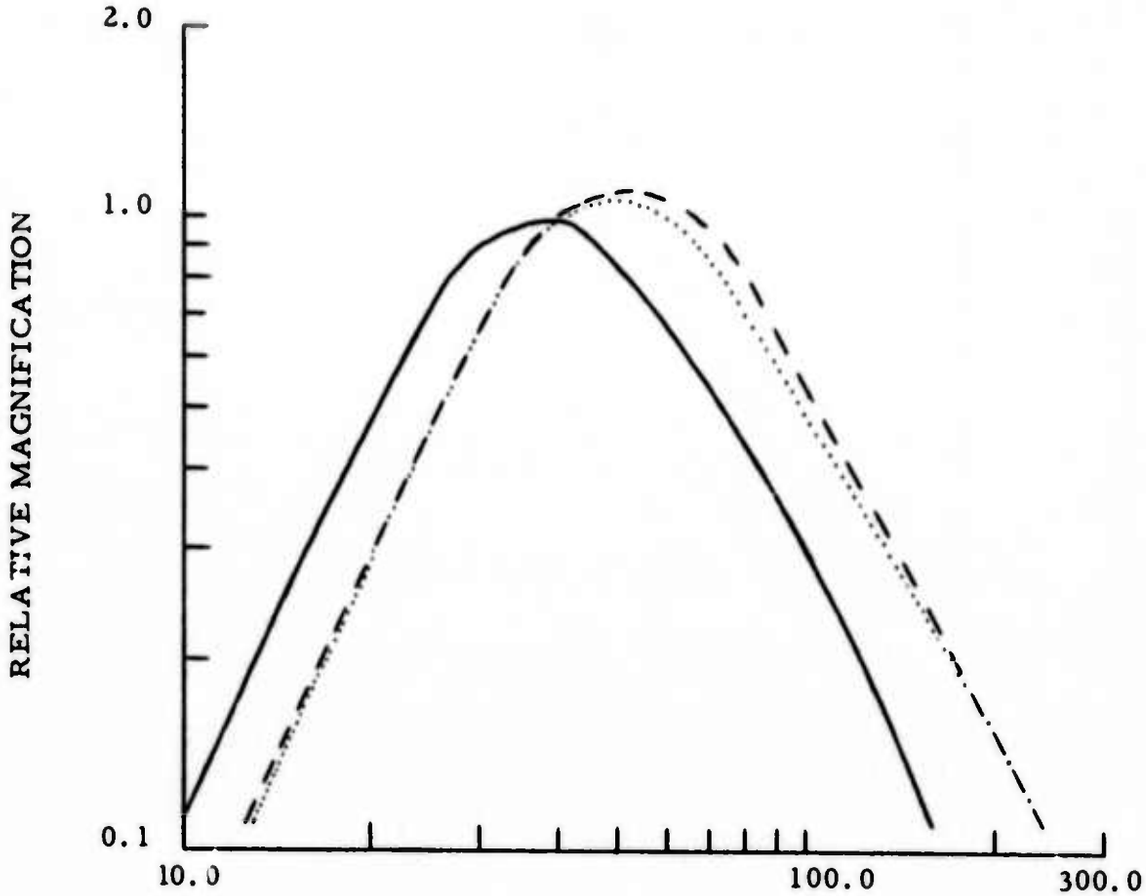
SYSTEM RESPONSE FOR KON



Gain at T = 40.0 Sec.

———	Z	0.656 mμ/count
- - -	N	0.530 mμ/count
. . . .	E	0.470 mμ/count

SYSTEM RESPONSE FOR OGD



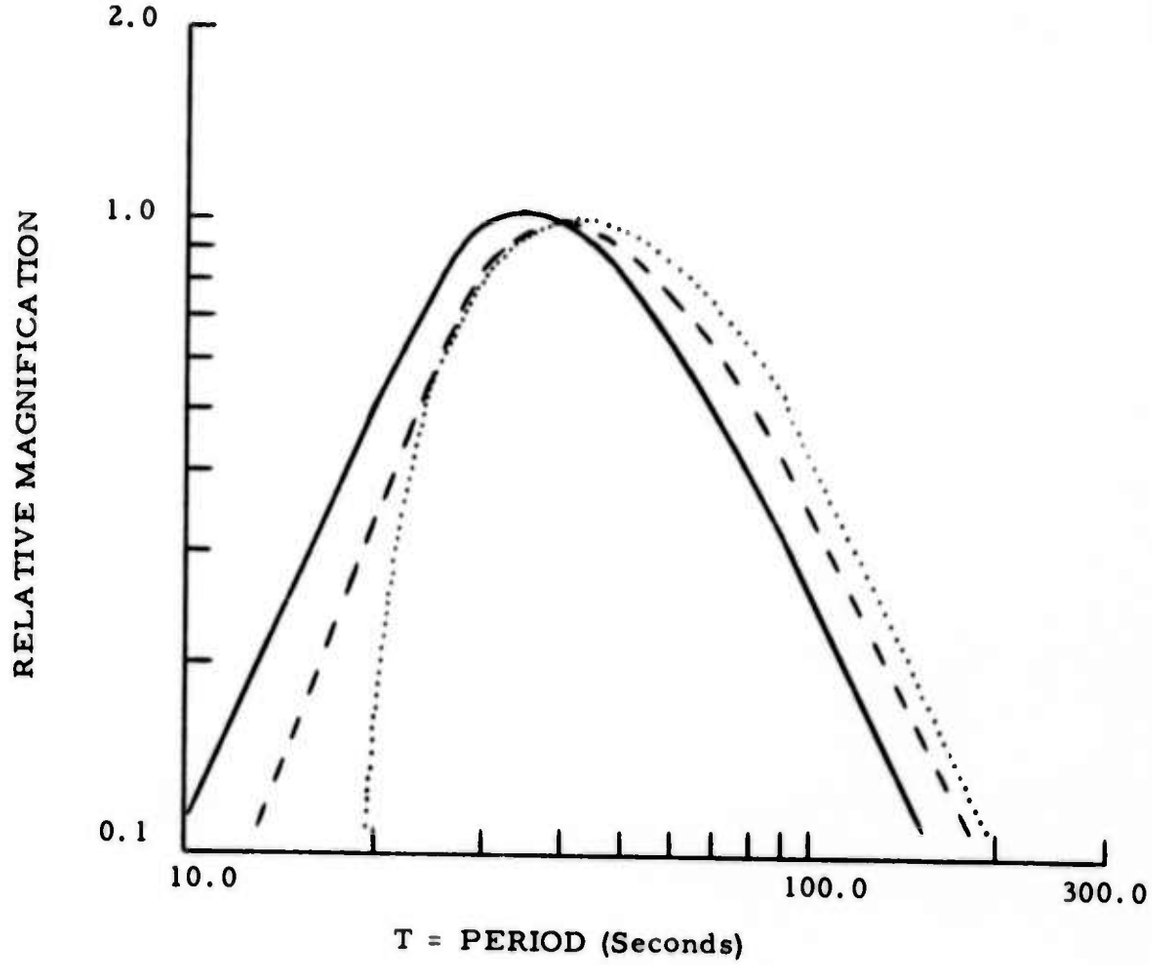
Gain at T = 40.0 Sec.

——— Z 0.927 mμ/count

- - - N 0.355 mμ/count

. . . . E 0.397 mμ/count

SYSTEM RESPONSE FOR KIP



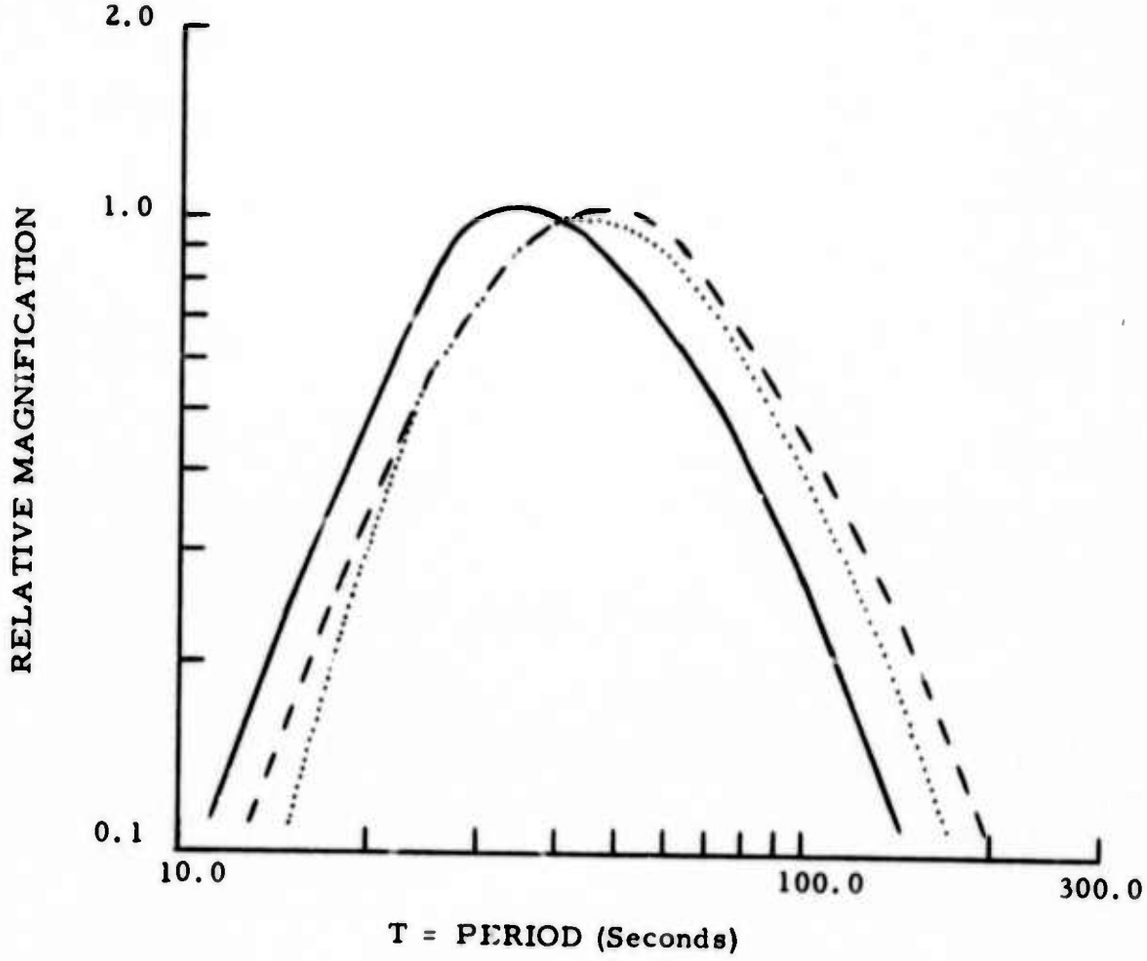
Gain at T = 40.0 Sec.

——— Z 1.15 mμ/count

- - - N 1.41 mμ/count

. . . . E 1.14 mμ/count

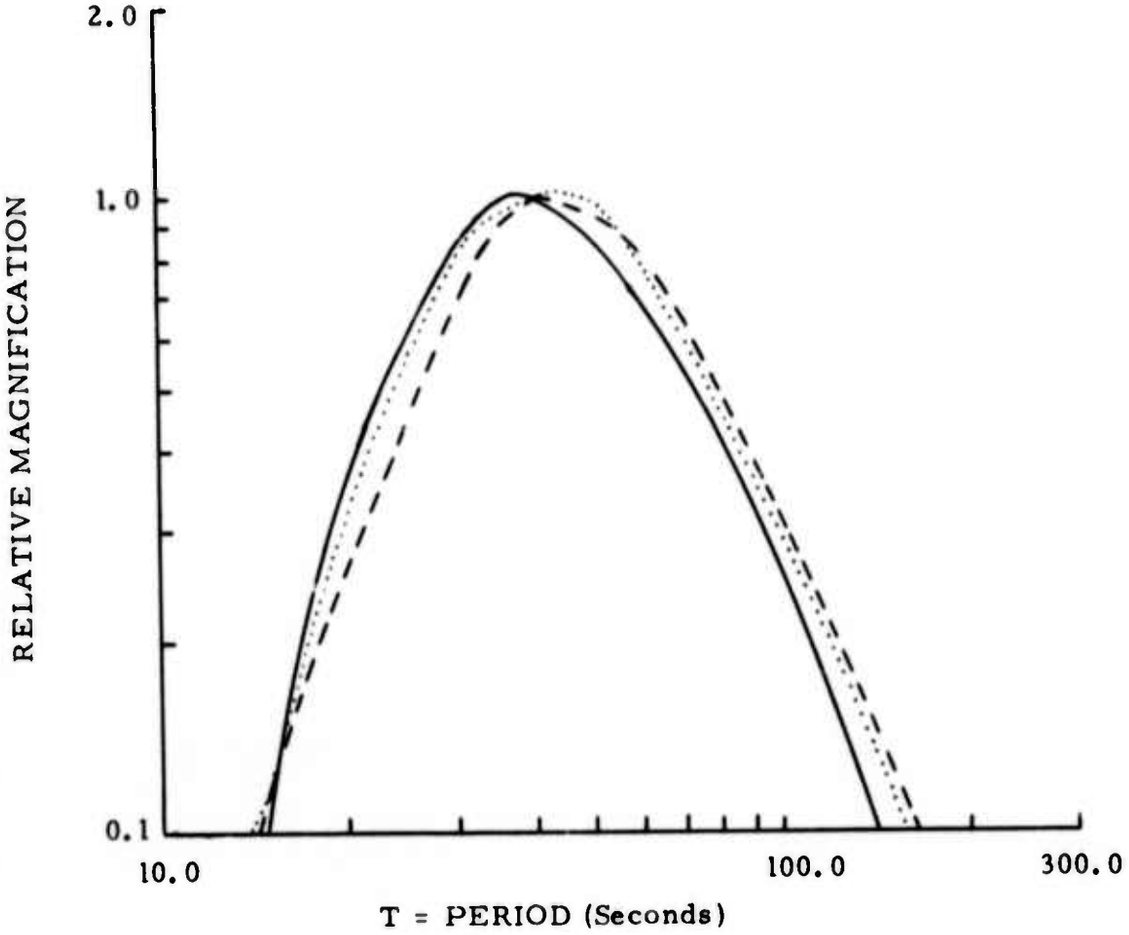
SYSTEM RESPONSE FOR ALQ



Gain at T = 40.0 Sec.

——	Z	1.12 mμ/count
- - -	N	0.697 mμ/count
. . . .	E	0.819 mμ/count

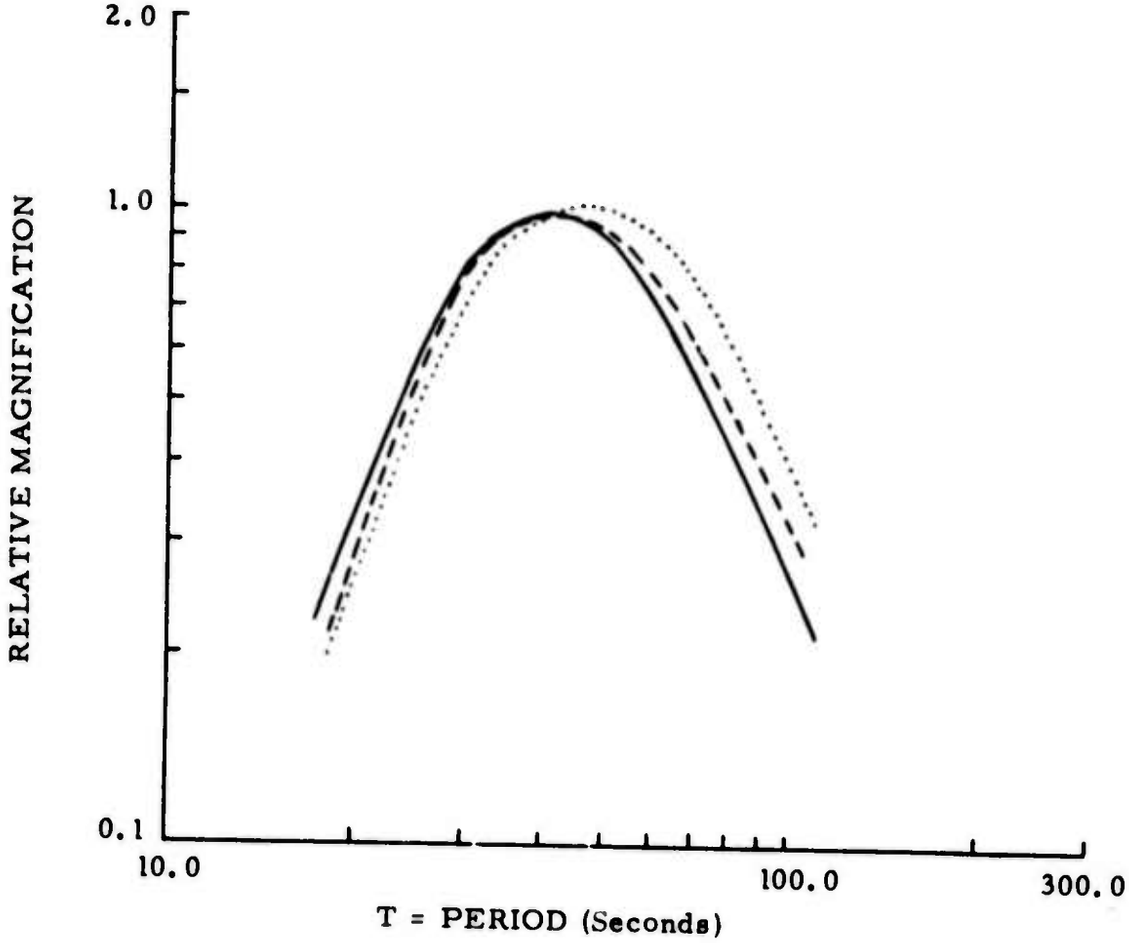
SYSTEM RESPONSE FOR ZLP



Gain at T = 40.0 Sec.

———	Z	1.354 mμ /count
- - -	N	1.372 mμ /count
. . . .	E	1.187 mμ /count

SYSTEM RESPONSE FOR MAT



Gain at T = 40.0 Sec.

——— Z 1.460 mμ /count

- - - N 0.786 mμ /count

. . . . E 1.120 mμ /count

APPENDIXES FOR SECTION III
A THROUGH D

EILAT, ISRAEL

NUMBER OF GOOD SAMPLES 18															
ZMEANS=	14.30	6.17	2.74	2.83	2.13	1.52	1.53	1.80	2.04	2.25	2.11	2.27	2.30	2.21	2.25	2.34
ZSDV =	20.02	7.10	3.21	3.27	2.85	1.25	1.02	1.85	2.15	2.87	2.20	2.24	2.05	2.09	2.37	2.52
SMEANS=	19.35	9.31	6.28	3.90	2.71	2.10	1.74	1.33	1.36	1.39	1.34	1.44	1.56	1.62	1.35	1.20
SSDV =	31.98	14.36	10.01	5.66	3.51	2.52	1.94	1.21	1.25	1.28	1.41	1.74	2.01	1.73	1.58	1.19
EMEANS=	23.10	13.15	7.14	5.51	4.63	4.50	4.34	3.46	3.88	4.82	3.78	4.06	3.71	3.86	3.02	2.59
ESDV =	25.32	13.55	6.36	3.36	3.02	3.	3.39	2.64	3.74	5.43	3.11	3.20	2.73	2.78	2.19	1.72

ALBUQUERQUE, NEW MEXICO

NUMBER OF GOOD SAMPLES 66																
ZMEANS=	5.44	3.37	2.70	2.11	1.89	2.03	2.25	3.10	4.49	5.63	7.28	7.27	7.11	6.39	5.32	4.37
ZSDV =	3.20	2.26	1.89	1.00	0.95	1.04	1.13	1.86	3.25	3.76	3.97	3.69	4.24	2.96	1.90	1.78
SMEANS=	23.90	14.33	9.49	7.31	5.81	4.81	4.55	5.03	7.35	8.52	10.54	11.00	11.75	11.00	10.33	9.35
SSDV =	21.96	13.01	9.64	6.93	4.76	2.92	2.97	2.58	5.15	4.46	5.81	5.75	5.44	5.89	5.26	3.97
EMEANS=	14.29	9.65	6.70	5.26	4.24	3.95	4.10	5.43	7.50	10.02	13.49	14.23	15.16	15.19	14.34	11.64
ESDV =	8.42	6.58	4.19	3.36	1.99	2.25	2.29	3.29	4.31	5.88	7.05	7.69	8.83	7.51	7.34	5.67

LA PAZ, BOLIVIA

NUMBER OF GOOD SAMPLES 38																
ZMEANS=	5.01	3.85	2.97	2.76	2.97	3.22	3.80	5.06	5.20	5.26	6.95	7.27	10.67	8.34	7.88	6.07
ZSDV =	5.46	5.86	3.11	3.87	4.64	5.10	7.39	9.20	8.26	7.02	8.07	9.21	26.64	11.63	12.85	6.60
SMEANS=	8.73	6.08	4.46	3.74	3.55	3.15	3.66	4.49	5.05	5.83	7.12	8.23	10.26	9.07	8.00	6.77
SSDV =	11.87	7.68	5.23	4.20	4.71	4.03	4.52	7.66	5.68	7.66	5.78	7.25	17.63	11.54	9.31	5.07
EMEANS=	13.17	8.93	4.57	3.41	2.52	3.00	3.45	4.00	4.49	4.54	5.28	6.76	10.00	7.16	6.51	5.45
ESDV =	11.79	5.68	3.55	3.31	3.60	4.60	7.62	6.97	8.51	6.55	4.99	11.74	26.12	11.75	8.70	5.10

MATSUSHIRO, JAPAN

NUMBER OF GOOD SAMPLES 11																
ZMEANS=	32.76	17.18	10.36	7.14	5.16	3.72	3.59	4.58	3.70	3.71	4.23	5.08	5.23	5.72	5.97	5.44
ZSDV =	22.22	13.28	8.25	5.01	3.32	1.86	1.77	2.78	1.57	1.39	0.99	1.75	1.60	2.77	1.36	1.47
SMEANS=	15.85	10.96	7.55	6.65	5.14	3.92	3.82	3.83	3.40	3.96	4.33	5.57	6.33	5.41	5.47	5.22
SSDV =	12.16	6.71	5.90	5.97	4.22	2.09	2.62	1.62	1.32	2.60	1.36	1.78	2.75	1.97	1.07	1.26
EMEANS=	7.89	5.64	4.71	3.38	2.45	2.63	2.77	2.84	3.11	3.59	5.31	6.50	6.40	5.81	7.12	6.18
ESDV =	2.66	2.80	2.18	1.30	1.01	1.27	1.33	1.26	1.08	0.99	1.73	2.59	3.47	2.51	2.24	1.69

62.5 — 13.5

PERIOD (SECONDS)

APPENDIX III-A. MEANS AND STANDARD DEVIATIONS OF THREE-COMPONENT GROUND NOISE AMPLITUDES AT VLPE STATIONS. DATA GIVEN IN RMS MILLIMICRONS.

NUMBER OF GOOD SAMPLES 18 — EILAT, ISRAEL

ZMEANS=	0.75	0.52	0.27	0.22	0.07	0.04	0.09	0.09	0.11	0.11	0.11	0.16	0.16	0.13	0.09	0.11
ZSDV =	0.64	0.53	0.43	0.47	0.46	0.37	0.31	0.38	0.43	0.44	0.45	0.44	0.45	0.46	0.52	0.51
SMEANS=	0.76	0.53	0.32	0.19	0.10	0.01	-0.05	-0.10	-0.09	-0.10	-0.11	-0.13	-0.09	-0.06	-0.10	-0.11
SSDV =	0.78	0.71	0.74	0.68	0.65	0.61	0.59	0.53	0.52	0.53	0.51	0.54	0.50	0.52	0.46	0.41
EMEANS=	1.08	0.91	0.69	0.62	0.54	0.49	0.47	0.39	0.40	0.45	0.42	0.44	0.40	0.44	0.34	0.29
ESDV =	0.52	0.44	0.41	0.37	0.38	0.41	0.43	0.39	0.42	0.48	0.42	0.44	0.44	0.43	0.40	0.39

NUMBER OF GOOD SAMPLES 66 — ALBUQUERQUE, NEW MEXICO

ZMEANS=	0.69	0.48	0.38	0.28	0.23	0.26	0.30	0.42	0.57	0.68	0.81	0.81	0.80	0.77	0.70	0.61
ZSDV =	0.18	0.17	0.18	0.21	0.18	0.19	0.20	0.26	0.26	0.23	0.22	0.21	0.21	0.17	0.16	0.16
SMEANS=	1.24	1.02	0.85	0.75	0.67	0.62	0.58	0.65	0.79	0.87	0.96	0.90	1.03	0.90	0.67	0.63
SSDV =	0.34	0.33	0.31	0.28	0.27	0.23	0.25	0.22	0.25	0.23	0.24	0.21	0.20	0.21	0.20	0.21
EMEANS=	1.10	0.92	0.76	0.64	0.59	0.54	0.56	0.67	0.81	0.94	1.08	1.09	1.13	1.13	1.11	1.02
ESDV =	0.21	0.23	0.23	0.28	0.19	0.21	0.21	0.23	0.23	0.24	0.22	0.23	0.20	0.20	0.21	0.20

NUMBER OF GOOD SAMPLES 38 — LA PAZ, BOLIVIA

ZMEANS=	0.43	0.32	0.23	0.17	0.20	0.20	0.25	0.39	0.43	0.46	0.60	0.62	0.69	0.69	0.66	0.60
ZSDV =	0.64	0.67	0.73	0.68	0.66	0.69	0.71	0.72	0.55	0.66	0.65	0.46	0.63	0.59	0.55	0.54
SMEANS=	0.86	0.65	0.53	0.45	0.43	0.38	0.43	0.49	0.60	0.63	0.76	0.82	0.86	0.85	0.81	0.77
SSDV =	0.31	0.31	0.29	0.32	0.29	0.28	0.31	0.30	0.29	0.31	0.28	0.27	0.30	0.26	0.25	0.21
EMEANS=	0.89	0.63	0.48	0.33	0.27	0.25	0.25	0.36	0.39	0.44	0.54	0.60	0.69	0.65	0.65	0.61
ESDV =	0.55	0.52	0.49	0.50	0.44	0.45	0.47	0.47	0.47	0.44	0.45	0.43	0.44	0.41	0.37	0.34

NUMBER OF GOOD SAMPLES 11 — MATSUSHIRO, JAPAN

ZMEANS=	1.45	1.15	0.93	0.78	0.65	0.53	0.51	0.60	0.54	0.54	0.62	0.68	0.70	0.72	0.76	0.72
ZSDV =	0.23	0.26	0.26	0.25	0.24	0.20	0.20	0.24	0.16	0.15	0.09	0.14	0.13	0.10	0.10	0.11
SMEANS=	1.12	0.97	0.82	0.71	0.62	0.54	0.51	0.55	0.51	0.54	0.61	0.73	0.77	0.71	0.73	0.71
SSDV =	0.24	0.25	0.28	0.31	0.29	0.21	0.24	0.19	0.14	0.22	0.15	0.14	0.16	0.14	0.08	0.11
EMEANS=	0.88	0.72	0.44	0.50	0.43	0.35	0.41	0.42	0.47	0.54	0.70	0.79	0.76	0.73	0.83	0.78
ESDV =	0.14	0.17	0.16	0.15	0.15	0.17	0.19	0.19	0.16	0.10	0.14	0.15	0.19	0.19	0.15	0.12

62.5 ——— PERIOD (SECONDS) ——— 13.5

APPENDIX III-B. MEANS AND STANDARD DEVIATION OF BASE 10 LOGARITHMS OF THREE-COMPONENT GROUND NOISE AMPLITUDES (MILLIMICRONS, RMS) AT VLPE STATIONS.

PERIOD (Seconds) ⟶

PERIOD (Seconds) ↑

ZN CORRELATION

	12.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.35	0.31	0.32	0.44	0.31	0.23	0.17	0.18	0.15	0.36	0.47	0.53	0.46	0.40	0.45	0.40
50.0	0.29	0.26	0.24	0.36	0.24	0.21	0.11	0.12	0.11	0.26	0.37	0.43	0.39	0.38	0.36	
44.0	0.30	0.35	0.30	0.40	0.30	0.35	0.20	0.21	0.15	0.29	0.42	0.51	0.53	0.39		
37.0	-.08	-.07	-.12	-.04	-.05	-.03	-.20	-.15	-.16	-.14	-.04	-.00	0.03			
32.2	-.13	-.12	-.16	-.11	-.15	-.07	-.22	-.23	-.18	-.20	-.12	-.09				
28.6	-.03	0.03	-.07	-.02	-.06	0.10	-.13	-.14	-.06	-.12	-.01					
25.6	0.03	0.06	-.01	0.04	-.01	0.15	-.06	-.07	-.01	-.08						
23.3	-.06	-.04	-.12	-.06	-.10	0.01	-.17	-.17	-.10							
21.3	-.05	-.02	-.18	-.10	-.08	-.01	-.14	-.05								
19.6	0.10	0.17	0.01	0.05	0.10	0.21	0.07									
18.2	0.22	0.32	0.15	0.15	0.17	0.41										
17.1	0.29	0.38	0.23	0.18	0.15											
16.2	0.18	0.24	0.11	0.05												
15.1	0.20	0.27	0.13													
14.3	0.32	0.34														
13.5	0.24															

ZE CORRELATION

	12.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.38	-.38	-.40	-.46	-.46	-.34	-.38	-.38	-.30	-.35	-.31	-.37	-.21	-.20	0.02	0.00
50.0	-.44	-.43	-.44	-.51	-.49	-.38	-.41	-.41	-.34	-.37	-.32	-.40	-.24	-.22	-.00	
44.0	-.26	-.32	-.29	-.35	-.34	-.32	-.41	-.35	-.25	-.23	-.15	-.17	0.06	0.10		
37.0	-.40	-.32	-.37	-.40	-.44	-.35	-.37	-.38	-.34	-.34	-.31	-.31	-.11			
32.2	-.37	-.29	-.32	-.37	-.39	-.35	-.33	-.33	-.30	-.27	-.25	-.29				
28.6	-.27	-.21	-.25	-.32	-.35	-.28	-.29	-.25	-.20	-.22	-.19					
25.6	-.23	-.23	-.22	-.24	-.23	-.21	-.23	-.21	-.14	-.13						
23.3	-.28	-.18	-.19	-.22	-.23	-.14	-.11	-.13	-.12							
21.3	0.06	0.23	0.26	0.39	0.33	0.45	0.60	0.50								
19.6	0.27	0.39	0.44	0.63	0.55	0.68	[0.62]									
18.2	0.25	0.35	0.36	0.50	0.50	0.60										
17.1	0.34	0.43	0.43	0.45	0.46											
16.2	0.32	0.44	0.44	0.53												
15.1	0.50	0.63	0.58													
14.3	0.49	0.60														
13.5	0.62															

AE CORRELATION

	12.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.02	-.12	-.06	-.15	-.05	-.01	-.08	-.03	0.17	0.00	0.08	0.27	0.30	0.44	0.41	0.24
50.0	0.00	-.10	-.02	-.13	-.07	-.00	-.09	-.05	0.15	-.03	0.07	0.27	0.28	0.48	0.45	
44.0	0.02	-.09	-.02	-.12	-.07	0.02	-.06	-.04	0.14	-.05	0.04	0.20	0.19	0.38		
37.0	0.06	-.02	0.00	-.06	-.01	0.05	0.01	0.08	0.28	0.10	0.15	0.28	0.31			
32.2	0.09	-.00	0.02	-.06	-.02	0.11	0.01	0.08	0.25	0.09	0.16	0.21				
28.6	.13	0.04	0.08	-.02	0.02	0.13	0.02	0.06	0.26	0.09	0.18					
25.6	0.19	0.10	0.14	0.02	0.04	0.14	0.04	0.12	0.26	0.05						
23.3	0.35	0.25	0.33	0.19	0.23	0.32	0.20	0.29	0.45							
21.3	0.26	0.18	0.22	0.17	0.18	0.23	0.15	0.24								
19.6	0.30	0.18	0.23	0.15	0.18	0.24	0.13									
18.2	0.21	0.13	0.15	0.10	0.13	0.22										
17.1	0.11	0.01	0.08	0.02	0.07											
16.2	0.03	-.07	-.01	-.08												
15.1	0.21	0.09	0.10													
14.3	0.20	0.13														
13.5	0.19															

EILAT, ISRAEL

APPENDIX III-C. INTER COMPONENT LINEAR CORRELATION COEFFICIENTS FOR RMS GROUND NOISE AMPLITUDES AT VLPE STATIONS AS A FUNCTION OF WAVE PERIOD. HORIZONTAL AXIS DATA LISTS SECOND COMPONENT.

PERIOD (Seconds) →

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.18	0.09	0.10	0.18	C.C4	C.1C	C.C1	-.C3	C.C5	C.1A	0.14	0.12	0.08	0.10	0.07	0.15
50.0	0.12	0.06	0.07	0.13	-.01	0.07	0.04	-.03	0.06	0.22	0.15	0.15	0.15	0.15	0.14	
44.0	0.08	0.06	0.06	C.08	0.04	0.13	C.C6	C.C7	0.15	0.27	0.23	0.20	0.20	0.20		
37.0	0.04	-.01	0.01	0.06	-.03	0.05	0.C6	-.C3	C.16	0.32	0.27	0.31	0.29			
32.2	0.10	0.05	0.08	0.22	0.01	C.08	0.11	C.CA	C.21	0.38	0.41	0.31				
28.6	0.11	0.04	0.05	0.17	0.04	0.11	0.20	C.15	0.24	0.42	0.36					
25.6	0.22	0.19	0.06	0.23	0.15	C.14	C.20	C.29	0.31	0.48						
23.3	0.15	0.11	0.10	0.27	0.22	C.41	C.46	C.5A	0.47							
21.3	0.05	0.C3	0.13	0.27	C.28	C.53	C.55	C.66								
19.6	0.17	0.CA	0.16	0.34	0.37	C.5C	C.64									
18.2	0.34	0.31	C.31	C.42	0.49	0.6A										
17.1	0.49	0.44	0.4A	0.64	0.67											
16.2	0.58	0.59	0.74	0.67												
15.1	0.62	0.70	0.76													
14.3	0.78	0.75														
13.5	0.73															

7N CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.09	0.07	0.12	0.05	C.10	0.1C	C.C2	C.1C	0.1C	0.24	0.23	0.32	0.37	0.26	0.19	0.42
50.0	0.06	0.03	0.10	0.02	0.05	C.C4	C.04	C.11	C.13	0.33	0.29	0.41	0.55	0.41	0.32	
44.0	0.04	-.07	C.07	C.C5	0.C9	C.12	C.1C	C.25	C.21	C.3A	0.33	0.42	0.58	0.42		
37.0	0.03	-.06	0.05	0.1C	C.09	C.CA	C.C6	C.14	0.14	0.47	0.47	0.57	0.73			
32.2	0.09	-.03	0.14	0.13	C.17	C.CA	C.C7	C.22	0.27	C.54	0.49	0.62				
28.6	0.05	-.C8	0.06	C.14	C.23	C.1C	C.C6	C.25	0.24	0.42	0.46					
25.6	0.10	0.00	0.10	0.11	C.24	C.22	C.1C	C.36	C.3C	0.44						
23.3	0.11	-.05	0.C9	C.20	C.46	C.4C	C.3C	C.61	0.65							
21.3	0.01	-.0A	0.06	0.2C	0.46	C.52	C.3C	C.5A								
19.6	0.13	-.03	0.12	0.2C	0.52	C.5A	C.44									
18.2	0.25	0.C9	C.27	C.3A	C.6C	C.6A										
17.1	0.39	0.23	C.44	C.5C	0.74											
16.2	0.49	0.54	0.64	C.92												
15.1	0.61	0.5A	0.7C													
14.3	0.73	0.7C														
13.5	0.72															

7E CORRELATION

PERIOD (Seconds) ↑

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.06	-.07	-.04	-.08	C.C9	C.C5	C.C2	C.15	C.15	0.22	0.2A	0.47	0.45	0.6A	0.64	0.66
50.0	-.12	-.11	-.13	-.14	-.01	-.07	-.C7	C.C5	C.C9	0.1A	0.20	0.44	0.41	0.60	0.64	
44.0	-.0A	-.06	-.0C	-.0A	0.C3	-.C3	-.03	C.C5	0.13	0.24	0.2C	0.44	0.49	0.71		
37.0	-.06	-.05	-.03	-.05	0.C4	-.C2	-.C1	C.12	0.11	C.3C	0.2A	0.44	0.50			
32.2	-.02	-.00	-.02	-.04	C.05	-.C1	-.C3	C.CA	0.11	C.23	0.2A	0.43				
28.6	0.10	0.07	0.C7	0.C5	C.15	C.1C	C.C3	C.24	C.2C	C.42	0.49					
25.6	0.24	0.17	0.19	0.15	C.27	C.24	C.17	C.34	0.3C	C.45						
23.3	0.2A	0.16	C.1A	0.15	C.34	C.3C	C.3C	C.61	C.67							
21.3	0.33	0.1A	0.25	0.31	C.5A	C.63	0.7C	C.7A								
19.6	0.48	0.29	0.5C	C.54	0.7A	C.7A	C.A1									
18.2	0.56	0.41	0.61	0.63	0.8C	0.8A										
17.1	0.64	0.4A	0.64	C.56	C.7C											
16.2	0.6A	0.65	0.7A	C.7A												
15.1	0.75	0.7A	0.8C													
14.3	0.A1	0.7A														
13.5	0.79															

NE CORRELATION

ALBUQUERQUE, NEW MEXICO

APPENDIX III-C (cont'd)

PERIOD (Seconds) →

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.11	0.09	0.14	0.13	0.28	0.25	0.22	0.24	0.19	0.20	0.23	0.24	0.36	0.66	0.78	0.91
50.0	0.28	0.25	0.32	0.30	0.43	0.44	0.40	0.41	0.37	0.38	0.41	0.43	0.54	0.79	0.87	
44.0	0.42	0.40	0.45	0.44	0.53	0.54	0.53	0.53	0.50	0.50	0.53	0.55	0.64	0.84		
37.0	0.83	0.83	0.87	0.88	0.88	0.82	0.91	0.90	0.91	0.88	0.92	0.92	0.94			
32.2	0.92	0.93	0.95	0.97	0.95	0.84	0.95	0.94	0.97	0.94	0.98	0.97				
28.6	0.88	0.91	0.92	0.94	0.84	0.89	0.94	0.95	0.97	0.95	0.97					
25.6	0.92	0.94	0.96	0.97	0.86	0.85	0.96	0.96	0.98	0.95						
23.3	0.92	0.94	0.96	0.97	0.86	0.86	0.96	0.97	0.98							
21.3	0.91	0.93	0.95	0.96	0.85	0.85	0.95	0.96								
19.6	0.91	0.93	0.94	0.95	0.87	0.85	0.97									
18.2	0.90	0.91	0.94	0.94	0.90	0.92										
17.1	0.92	0.94	0.96	0.96	0.85											
16.2	0.94	0.97	0.98	0.99												
15.1	0.95	0.96	0.97													
14.3	0.96	0.97														
13.5	0.92															

ZA CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.13	0.24	0.14	0.13	0.17	0.23	0.22	0.15	0.13	0.11	0.16	0.15	0.15	0.10	0.12	0.14
50.0	0.32	0.42	0.34	0.31	0.36	0.40	0.41	0.38	0.32	0.30	0.35	0.34	0.33	0.17	0.17	
44.0	0.44	0.54	0.47	0.45	0.48	0.50	0.53	0.51	0.45	0.44	0.49	0.48	0.45	0.22		
37.0	0.78	0.90	0.88	0.88	0.88	0.76	0.88	0.90	0.88	0.38	0.89	0.87	0.78			
32.2	0.86	0.95	0.96	0.97	0.95	0.78	0.93	0.97	0.96	0.97	0.96	0.93				
28.6	0.85	0.93	0.94	0.94	0.94	0.77	0.94	0.95	0.94	0.96	0.96					
25.6	0.87	0.96	0.96	0.98	0.97	0.79	0.95	0.98	0.97	0.98						
23.3	0.86	0.95	0.96	0.97	0.96	0.80	0.95	0.97	0.97							
21.3	0.87	0.95	0.96	0.97	0.97	0.80	0.96	0.98								
19.6	0.85	0.93	0.93	0.94	0.94	0.79	0.94									
18.2	0.86	0.93	0.94	0.94	0.94	0.87										
17.1	0.83	0.93	0.94	0.95	0.94											
16.2	0.84	0.95	0.97	0.96												
15.1	0.85	0.93	0.95													
14.3	0.84	0.94														
13.5	0.84															

ZE CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.34	0.48	0.41	0.41	0.43	0.42	0.46	0.46	0.40	0.39	0.43	0.40	0.37	0.15	0.19	0.17
50.0	0.61	0.75	0.70	0.70	0.71	0.64	0.73	0.74	0.69	0.69	0.71	0.69	0.62	0.23	0.30	
44.0	0.70	0.84	0.80	0.80	0.81	0.72	0.82	0.83	0.79	0.79	0.80	0.77	0.69	0.24		
37.0	0.79	0.91	0.90	0.91	0.90	0.76	0.90	0.92	0.92	0.92	0.91	0.88	0.78			
32.2	0.84	0.94	0.95	0.96	0.95	0.78	0.93	0.96	0.96	0.96	0.95	0.92				
28.6	0.83	0.94	0.95	0.96	0.95	0.77	0.93	0.96	0.95	0.97	0.95					
25.6	0.81	0.89	0.90	0.91	0.90	0.71	0.89	0.91	0.92	0.93						
23.3	0.85	0.93	0.96	0.98	0.96	0.77	0.95	0.98	0.97							
21.3	0.79	0.91	0.92	0.94	0.93	0.78	0.92	0.95								
19.6	0.82	0.92	0.93	0.95	0.93	0.77	0.91									
18.2	0.76	0.86	0.85	0.85	0.87	0.83										
17.1	0.77	0.89	0.88	0.87	0.85											
16.2	0.82	0.94	0.96	0.98												
15.1	0.85	0.93	0.96													
14.3	0.78	0.89														
13.5	0.80															

PERIOD (Seconds) ↑

NE CORRELATION

LA PAZ, BOLIVIA

APPENDIX III-C (cont'd)

PERIOD (Seconds) ——————————→

PERIOD (Seconds) ↓

ZN CORRELATION FOR SITE NUMBER 11

	12.5	14.3	16.1	18.2	20.4	22.7	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.30	-.35	-.17	-.32	-.13	-.19	-.09	-.20	-.38	-.12	0.03	0.19	0.18
50.0	-.32	-.32	-.10	-.24	-.16	-.24	-.24	-.37	-.41	-.29	-.13	-.03	0.01
44.0	-.33	-.35	-.19	-.34	-.23	-.30	-.27	-.35	-.46	-.30	-.14	-.03	-.01
37.0	-.40	-.33	-.28	-.47	-.33	-.44	-.40	-.52	-.58	-.41	-.23	-.15	-.19
32.2	-.35	-.38	-.32	-.47	-.38	-.43	-.35	-.47	-.60	-.36	-.25	-.10	
28.6	-.32	-.39	-.13	-.16	-.35	-.32	-.21	-.36	-.37	-.24	-.13		
25.6	-.13	-.15	0.30	0.41	-.27	-.08	-.06	-.18	0.04	-.19			
23.3	-.02	0.16	0.15	0.32	-.24	0.16	0.05	-.01	0.49				
21.3	0.12	-.27	0.34	0.41	-.42	-.18	0.07	-.03					
19.6	-.37	0.10	0.04	0.09	-.00	0.26	-.03						
18.2	-.11	0.14	0.11	0.09	-.12	-.14							
17.1	-.49	0.14	0.27	0.38	0.49								
16.2	-.05	0.40	0.52	0.60									
15.1	0.07	0.24	0.78										
14.3	0.42	0.63											
13.5	0.63												

ZE CORRELATION FOR SITE NUMBER 11

	12.5	14.3	16.1	18.2	20.4	22.7	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.30	-.18	-.01	-.20	-.28	-.24	-.14	-.63	-.25	-.44	-.35	-.36	-.38
50.0	-.21	-.03	0.08	-.07	-.11	-.09	0.05	-.53	-.20	-.34	-.24	-.37	-.34
44.0	-.22	-.11	-.00	-.18	-.21	-.18	-.00	-.55	-.25	-.39	-.30	-.40	-.35
37.0	-.26	-.26	-.13	-.25	-.27	-.23	0.01	-.52	-.33	-.42	-.32	-.43	-.24
32.2	-.34	-.35	-.27	-.33	-.30	-.25	0.04	-.47	-.31	-.36	-.27	-.29	
28.6	-.19	-.08	-.07	-.00	-.04	-.08	0.35	-.31	0.09	0.01	0.13		
25.6	0.04	0.32	0.27	0.55	0.51	0.35	0.75	0.15	0.59	0.62			
23.3	0.29	0.26	0.01	0.43	0.43	0.27	0.65	0.71	0.74				
21.3	0.05	0.36	0.18	0.51	0.53	0.21	0.68	0.35					
19.6	0.28	0.11	0.01	0.24	0.30	0.23	0.73						
18.2	0.10	0.29	0.25	0.25	0.23	0.26							
17.1	0.43	0.55	0.68	0.52	0.42								
16.2	0.47	0.70	0.71	0.76									
15.1	0.13	0.70	0.86										
14.3	0.17	0.59											
13.5	0.68												

NE CORRELATION

	12.5	14.3	16.1	18.2	20.4	22.7	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.07	-.12	0.06	-.10	-.35	-.24	-.23	-.38	-.15	-.34	-.37	0.10	-.18
50.0	-.13	-.27	0.00	-.13	-.37	-.21	-.30	-.36	-.23	-.34	-.36	0.14	-.04
44.0	-.32	-.26	0.01	0.03	-.23	-.16	-.24	-.32	-.01	-.19	-.20	0.29	0.02
37.0	-.39	-.28	-.01	0.17	-.08	-.03	-.16	-.12	0.15	0.01	-.05	0.34	0.08
32.2	-.43	-.40	-.08	-.00	-.24	-.18	-.37	-.27	0.00	-.17	-.20	0.26	
28.6	-.08	-.33	-.08	0.03	-.22	-.17	-.08	0.08	0.18	0.05	-.13		
25.6	-.16	-.34	-.31	-.05	-.26	-.25	-.13	0.25	0.31	0.15			
23.3	0.27	0.11	-.09	0.18	0.04	-.10	0.28	0.65	0.67				
21.3	-.31	-.31	-.15	0.14	-.05	-.06	-.24	0.17					
19.6	-.41	-.34	-.11	0.22	0.02	0.02	-.06						
18.2	-.14	-.23	0.03	0.30	0.11	0.26							
17.1	-.25	-.10	0.42	0.43	0.31								
16.2	-.14	0.43	0.68	0.55									
15.1	-.36	0.31	0.71										
14.3	0.22	0.07											
13.5	-.03												

MATSUSHIRO, JAPAN

APPENDIX III-C (cont'd)

PERIOD (Seconds) ——————————→

PERIOD (Seconds) ↑

```
      12.5 14.3 15.1 16.2 17.1 18.2 19.6 21.3 23.2 25.6 28.6 32.2 37.0 44.0 50.0 62.5
62.5  0.08 0.05 -.01 0.12 0.03 -.00 -.10 -.04 0.03 0.04 0.13 0.15 0.13 0.11 0.21 0.26
50.0  0.16 0.12 0.02 0.17 0.06 0.04 -.06 -.00 0.08 0.07 0.17 0.17 0.14 0.14 0.23
44.0  0.14 0.14 0.00 0.15 0.09 0.04 -.00 0.08 0.12 0.11 0.21 0.22 0.24 0.21
37.0  0.01 -.03 -.16 0.01 -.07 -.06 -.18 -.11 -.02 -.05 0.06 0.06 0.04
32.2 -.02 -.07 -.10 -.02 -.06 -.00 -.13 -.08 0.04 -.02 0.08 0.10
28.6  0.06 0.03 -.10 0.01 -.02 0.02 -.08 -.02 0.11 0.05 0.14
25.6  0.21 0.17 0.09 0.19 0.19 0.25 0.15 0.20 0.32 0.35
23.2  0.12 0.10 -.04 0.11 0.09 0.16 0.01 0.04 0.20
21.3  0.19 0.20 -.01 0.16 0.19 0.23 0.11 0.19
19.6  0.34 0.36 0.18 0.30 0.36 0.40 0.31
18.2  0.32 0.32 0.15 0.27 0.30 0.35
17.1  0.34 0.33 0.21 0.27 0.31
16.2  0.24 0.22 0.12 0.20
15.1  0.26 0.25 0.18
14.3  0.25 0.23
12.5  0.30
```

ZN CORRELATION

```
      12.5 14.3 15.1 16.2 17.1 18.2 19.6 21.3 23.2 25.6 28.6 32.2 37.0 44.0 50.0 62.5
62.5 -.43 -.54 -.45 -.53 -.54 -.46 -.61 -.56 -.43 -.42 -.34 -.46 -.28 -.10 0.09 0.15
50.0 -.44 -.53 -.44 -.53 -.54 -.45 -.56 -.56 -.41 -.43 -.33 -.46 -.29 -.17 0.08
44.0 -.22 -.30 -.22 -.29 -.30 -.25 -.45 -.39 -.28 -.24 -.14 -.22 -.09 0.10
37.0 -.40 -.42 -.37 -.44 -.40 -.45 -.53 -.53 -.38 -.38 -.36 -.38 -.20
32.2 -.29 -.30 -.26 -.32 -.39 -.34 -.44 -.40 -.27 -.22 -.21 -.25
28.6 -.19 -.20 -.18 -.23 -.28 -.24 -.33 -.26 -.19 -.17 -.15
25.6  0.03 -.05  0.01 -.02 -.05 -.01 -.11 -.08  0.04  0.06
23.2 -.09 -.08 -.03 -.08 -.12 -.04 -.09 -.07  0.03
21.3  0.15  0.22  0.23  0.21  0.16  0.27  0.27  0.25
19.6  0.46  0.53  0.52  0.54  0.51  0.57  0.58
18.2  0.32  0.36  0.36  0.38  0.38  0.43
17.1  0.33  0.40  0.39  0.40  0.39
16.2  0.37  0.45  0.44  0.44
15.1  0.43  0.52  0.49
14.3  0.43  0.53
12.5  0.47
```

ZE CORRELATION

```
      12.5 14.3 15.1 16.2 17.1 18.2 19.6 21.3 23.2 25.6 28.6 32.2 37.0 44.0 50.0 62.5
62.5  0.56 0.42 0.51 0.43 0.45 0.52 0.39 0.45 0.51 0.52 0.59 0.52 0.58 0.52 0.49 0.39
50.0  0.56 0.41 0.50 0.43 0.44 0.54 0.41 0.46 0.63 0.51 0.58 0.50 0.56 0.51 0.47
44.0  0.60 0.46 0.54 0.47 0.51 0.54 0.47 0.50 0.61 0.53 0.59 0.52 0.55 0.51
37.0  0.64 0.49 0.55 0.51 0.55 0.61 0.50 0.55 0.70 0.58 0.64 0.56 0.59
32.2  0.61 0.45 0.52 0.49 0.51 0.59 0.46 0.53 0.66 0.57 0.63 0.51
28.6  0.61 0.45 0.52 0.48 0.52 0.59 0.48 0.53 0.68 0.56 0.63
25.6  0.60 0.44 0.51 0.47 0.51 0.56 0.46 0.54 0.64 0.54
23.2  0.60 0.42 0.51 0.48 0.55 0.57 0.50 0.58 0.66
21.3  0.64 0.48 0.55 0.54 0.60 0.62 0.54 0.62
19.6  0.64 0.45 0.53 0.52 0.59 0.61 0.55
18.2  0.57 0.41 0.48 0.46 0.52 0.56
17.1  0.55 0.37 0.46 0.43 0.51
16.2  0.43 0.26 0.36 0.31
15.1  0.53 0.34 0.40
14.3  0.45 0.30
12.5  0.40
```

NE CORRELATION

EILAT, ISRAEL

APPENDIX III-D. INTER COMPONENT LINEAR CROSS CORRELATION COEFFICIENTS OF LOG AMPLITUDE (RMS MILLIMICRONS) NOISE AS A FUNCTION OF PERIOD AT VLPE STATION. HORIZONTAL AXIS DATA LISTS SECOND COMPONENT.

PERIOD (Seconds) ⟶

PERIOD (Seconds) ↑

ZN CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.40	0.24	0.29	0.34	0.19	0.28	0.22	0.10	0.11	0.30	0.26	0.32	0.21	0.17	0.07	0.20
50.0	0.29	0.23	0.21	0.25	0.12	0.18	0.15	0.09	0.18	0.38	0.29	0.31	0.28	0.26	0.20	
44.0	0.28	0.22	0.22	0.23	0.20	0.33	0.24	0.29	0.34	0.49	0.46	0.43	0.42	0.40		
37.0	0.30	0.06	0.06	0.13	0.06	0.22	0.33	0.09	0.22	0.38	0.34	0.41	0.35			
32.2	0.25	0.12	0.10	0.23	0.07	0.16	0.23	0.20	0.27	0.50	0.53	0.54				
28.6	0.22	0.09	0.09	0.16	0.02	0.13	0.26	0.29	0.29	0.55	0.45					
25.6	0.33	0.27	0.10	0.25	0.19	0.25	0.30	0.45	0.43	0.61						
23.3	0.38	0.24	0.22	0.33	0.29	0.50	0.60	0.59	0.50							
21.3	0.16	0.14	0.24	0.37	0.36	0.55	0.61	0.77								
19.6	0.30	0.20	0.34	0.42	0.49	0.64	0.67									
18.2	0.46	0.48	0.49	0.58	0.61	0.74										
17.1	0.51	0.49	0.56	0.68	0.70											
16.2	0.61	0.52	0.56	0.63												
15.1	0.62	0.69	0.69													
14.3	0.74	0.76														
13.5	0.68															

PF CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.26	0.17	0.30	0.24	0.30	0.27	0.24	0.29	0.22	0.35	0.37	0.30	0.45	0.18	0.19	0.34
50.0	0.27	0.18	0.30	0.16	0.15	0.14	0.18	0.23	0.27	0.46	0.46	0.52	0.51	0.46	0.51	
44.0	0.20	0.10	0.23	0.24	0.25	0.27	0.33	0.48	0.43	0.55	0.52	0.48	0.57	0.45		
37.0	0.09	-.06	0.12	0.28	0.27	0.19	0.32	0.34	0.23	0.56	0.60	0.44	0.69			
32.2	0.18	-.01	0.21	0.24	0.23	0.10	0.22	0.35	0.32	0.64	0.43	0.60				
28.6	0.09	-.06	0.14	0.21	0.22	0.20	0.23	0.36	0.36	0.64	0.65					
25.6	0.16	0.07	0.19	0.23	0.29	0.25	0.32	0.50	0.50	0.65						
23.3	0.17	0.02	0.22	0.40	0.54	0.53	0.55	0.72	0.65							
21.3	0.04	0.01	0.15	0.36	0.49	0.55	0.51	0.65								
19.6	0.24	0.10	0.21	0.39	0.55	0.62	0.56									
18.2	0.40	0.27	0.42	0.53	0.65	0.71										
17.1	0.47	0.33	0.50	0.62	0.70											
16.2	0.47	0.46	0.52	0.68												
15.1	0.68	0.62	0.75													
14.3	0.74	0.74														
13.5	0.68															

NF CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	-.00	0.01	0.04	0.09	0.21	0.14	0.11	0.22	0.28	0.31	0.35	0.45	0.34	0.71	0.68	0.72
50.0	-.07	-.04	-.08	-.04	0.07	-.03	-.02	0.13	0.23	0.22	0.25	0.43	0.26	0.71	0.67	
44.0	0.02	0.03	0.00	0.12	0.21	0.13	0.10	0.25	0.30	0.35	0.37	0.50	0.42	0.74		
37.0	0.02	0.04	0.09	0.10	0.18	0.10	0.09	0.23	0.27	0.40	0.45	0.54	0.48			
32.2	0.09	0.07	0.12	0.16	0.25	0.14	0.13	0.29	0.29	0.43	0.49	0.54				
28.6	0.14	0.14	0.13	0.19	0.22	0.16	0.12	0.31	0.38	0.51	0.60					
25.6	0.26	0.22	0.24	0.30	0.36	0.33	0.30	0.50	0.51	0.61						
23.3	0.29	0.20	0.23	0.29	0.44	0.49	0.41	0.58	0.62							
21.3	0.43	0.29	0.38	0.49	0.62	0.67	0.69	0.77								
19.6	0.47	0.31	0.50	0.61	0.76	0.74	0.87									
18.2	0.58	0.48	0.61	0.72	0.84	0.82										
17.1	0.68	0.59	0.67	0.67	0.79											
16.2	0.70	0.67	0.77	0.78												
15.1	0.73	0.71	0.70													
14.3	0.77	0.75														
13.5	0.72															

ALBUQUERQUE, NEW MEXICO

APPENDIX III-D (cont'd)

PERIOD (Seconds) ——————————→

PERIOD (Seconds) ↑

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.27	0.25	0.32	0.40	0.38	0.35	0.44	0.34	0.29	0.22	0.41	0.29	0.28	0.38	0.40	0.40
50.0	0.28	0.25	0.35	0.40	0.40	0.40	0.47	0.37	0.33	0.26	0.42	0.32	0.31	0.38	0.39	
44.0	0.26	0.25	0.32	0.36	0.37	0.38	0.44	0.33	0.29	0.21	0.39	0.28	0.26	0.33		
37.0	0.32	0.32	0.35	0.46	0.40	0.40	0.50	0.39	0.37	0.31	0.47	0.35	0.34			
32.2	0.40	0.38	0.44	0.52	0.44	0.44	0.54	0.45	0.42	0.38	0.53	0.41				
28.6	0.31	0.33	0.35	0.48	0.40	0.41	0.51	0.45	0.42	0.37	0.52					
25.6	0.38	0.38	0.43	0.49	0.44	0.44	0.53	0.45	0.42	0.36						
23.3	0.42	0.42	0.47	0.54	0.47	0.49	0.56	0.49	0.48							
21.3	0.41	0.40	0.45	0.50	0.44	0.47	0.55	0.49								
19.6	0.38	0.36	0.43	0.49	0.44	0.48	0.55									
18.2	0.39	0.38	0.47	0.51	0.48	0.53										
17.1	0.39	0.40	0.46	0.52	0.47											
16.2	0.48	0.49	0.54	0.60												
15.1	0.46	0.45	0.48													
14.3	0.48	0.51														
13.5	0.39															

ZN CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.34	0.29	0.27	0.29	0.29	0.23	0.24	0.23	0.21	0.21	0.22	0.16	0.18	0.15	0.13	0.18
50.0	0.38	0.32	0.32	0.32	0.33	0.25	0.28	0.28	0.24	0.24	0.25	0.19	0.20	0.15	0.12	
44.0	0.35	0.29	0.29	0.30	0.30	0.23	0.25	0.24	0.21	0.22	0.24	0.18	0.19	0.15		
37.0	0.38	0.32	0.32	0.34	0.34	0.25	0.28	0.28	0.27	0.28	0.29	0.23	0.23			
32.2	0.42	0.36	0.36	0.38	0.37	0.27	0.32	0.32	0.31	0.34	0.34	0.27				
28.6	0.40	0.35	0.35	0.38	0.37	0.25	0.34	0.31	0.31	0.34	0.35					
25.6	0.43	0.39	0.38	0.40	0.40	0.27	0.36	0.34	0.34	0.34						
23.3	0.46	0.41	0.41	0.43	0.43	0.32	0.35	0.38	0.35							
21.3	0.45	0.38	0.38	0.41	0.40	0.28	0.37	0.37								
19.6	0.41	0.34	0.35	0.38	0.38	0.27	0.34									
18.2	0.44	0.37	0.35	0.41	0.41	0.34										
17.1	0.41	0.34	0.35	0.38	0.38											
16.2	0.42	0.36	0.38	0.41												
15.1	0.45	0.37	0.40													
14.3	0.43	0.38														
13.5	0.40															

ZE CORRELATION

	13.5	14.3	15.1	16.2	17.1	18.2	19.6	21.3	23.3	25.6	28.6	32.2	37.0	44.0	50.0	62.5
62.5	0.32	0.41	0.40	0.44	0.42	0.37	0.41	0.44	0.36	0.37	0.42	0.38	0.34	0.34	0.32	0.33
50.0	0.47	0.56	0.54	0.59	0.57	0.47	0.54	0.57	0.51	0.53	0.57	0.53	0.48	0.44	0.43	
44.0	0.46	0.54	0.53	0.59	0.55	0.48	0.55	0.54	0.50	0.54	0.54	0.50	0.46	0.43		
37.0	0.51	0.49	0.48	0.52	0.50	0.43	0.51	0.52	0.51	0.56	0.55	0.50	0.45			
32.2	0.46	0.51	0.52	0.58	0.56	0.44	0.54	0.52	0.53	0.57	0.60	0.53				
28.6	0.46	0.51	0.51	0.58	0.54	0.41	0.52	0.51	0.52	0.60	0.58					
25.6	0.42	0.43	0.43	0.47	0.46	0.31	0.45	0.47	0.48	0.55						
23.3	0.49	0.51	0.52	0.58	0.56	0.41	0.58	0.58	0.57							
21.3	0.33	0.39	0.41	0.48	0.46	0.34	0.48	0.47								
19.6	0.39	0.39	0.40	0.47	0.47	0.31	0.45									
18.2	0.42	0.48	0.48	0.55	0.55	0.45										
17.1	0.42	0.54	0.55	0.60	0.59											
16.2	0.39	0.46	0.48	0.56												
15.1	0.51	0.56	0.55													
14.3	0.37	0.41														
13.5	0.41															

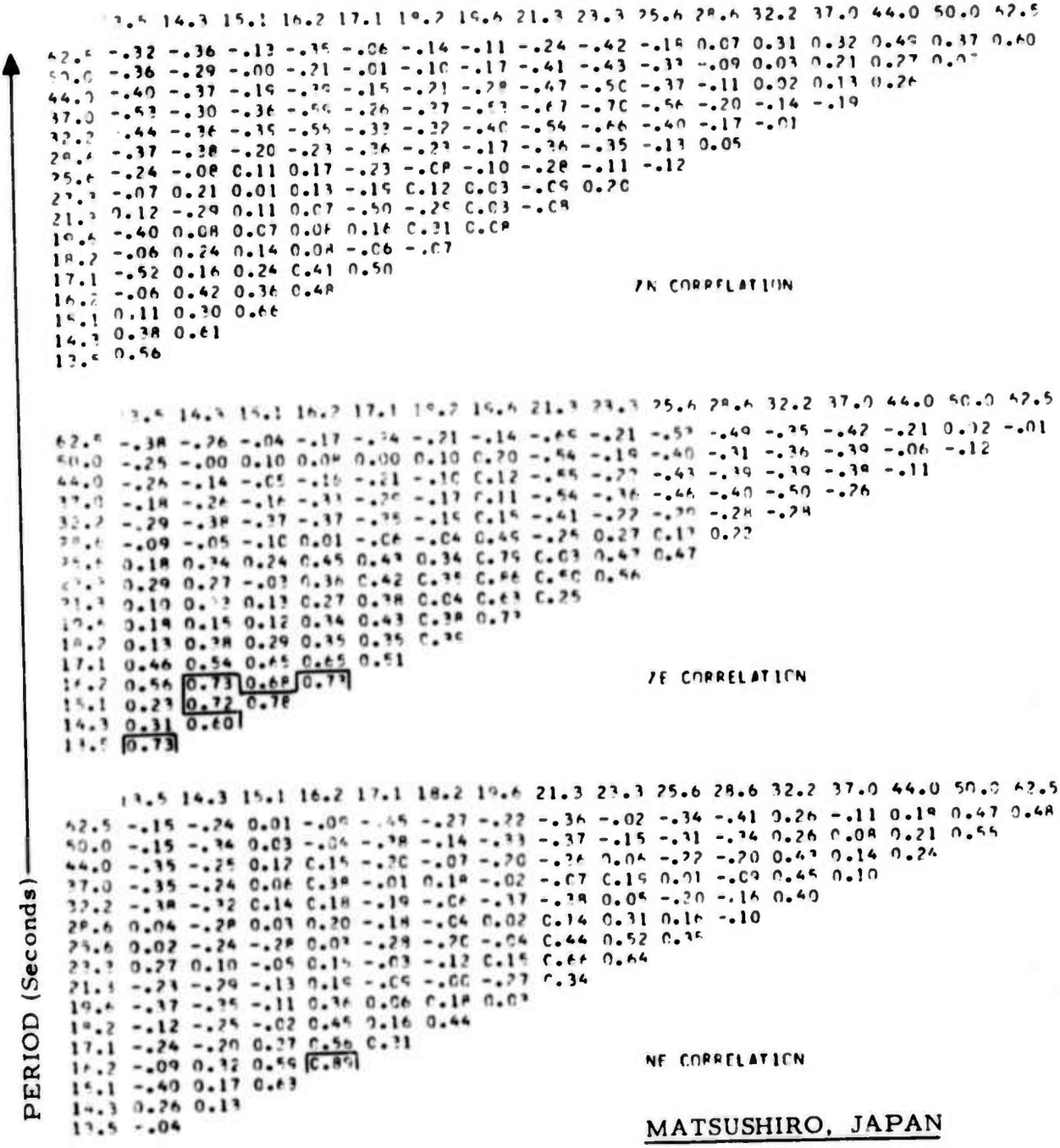
AS CORRELATION

LA PAZ, BOLIVIA

APPENDIX III-D (cont'd)

PERIOD (Seconds) ⟶

PERIOD (Seconds) ↑



MATSUSHIRO, JAPAN

APPENDIX III-D (cont'd)

APPENDIX V-A

DETERMINATION OF MINIMUM DISTANCE BETWEEN A GROUP OF POINTS AND A STRAIGHT LINE

APPENDIX V-A

DETERMINATION OF MINIMUM DISTANCE BETWEEN A GROUP OF POINTS AND A STRAIGHT LINE

In describing the general trend of a group of $M_s : m_b$ measurements, it has been the practice to designate one of the magnitudes the independent variable and the other the dependent variable. Since each of these magnitude measurements are independent of the other, it would seem advantageous to obtain an unbiased description of the trend.

Examining Figure III-A, we see that we must determine α and β so that we minimize the distances between the points and the optimum line;

$$(1) \qquad F = \sum_{i=1}^{n} d_i^2 \qquad n = \text{total number of } M_s : m_b \text{ pairs}$$

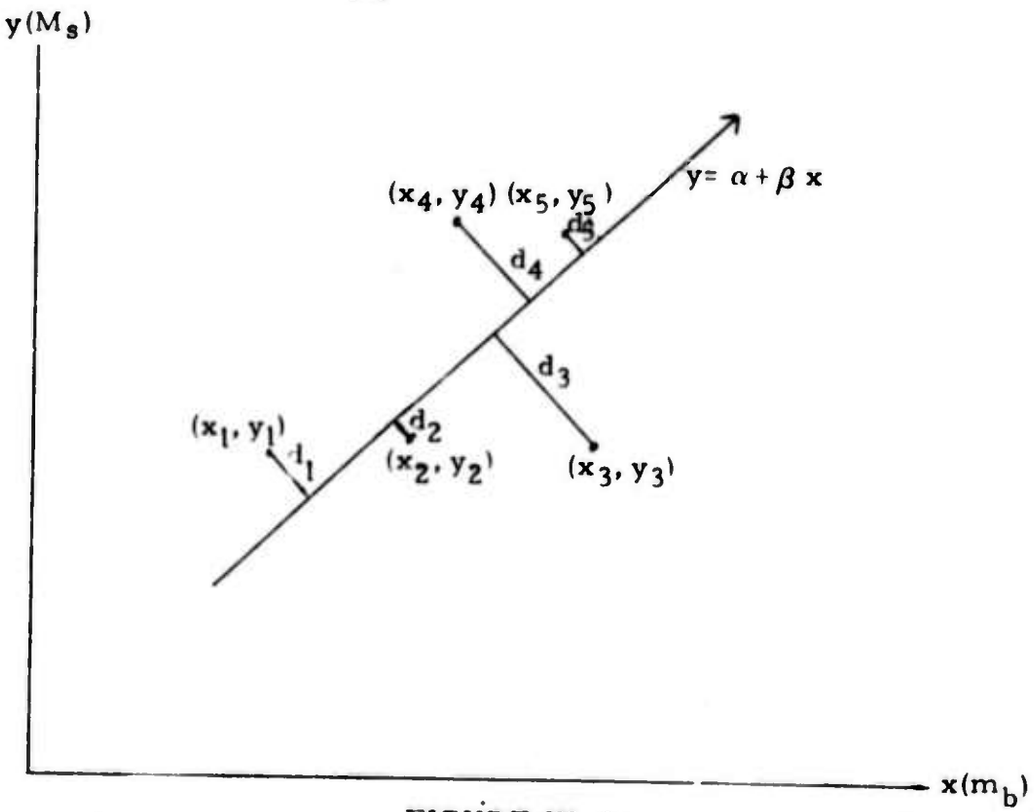


FIGURE III-A

It is quite easy to show that

$$(2) \qquad d_i = \frac{|y_i - \beta x_i - \alpha|}{\sqrt{1+\beta^2}}$$

Therefore, we can write (1) as

$$(3) \qquad F = \sum_{i=1}^{n} \frac{(y_i - \beta x_i - \alpha)^2}{1+\beta^2}$$

Expanding,

$$(4) \qquad F = \frac{1}{1+\beta^2} \sum_i (y_i^2 + \beta^2 x_i^2 + \alpha^2 - 2\alpha y_i + 2\alpha\beta x_i - 2\beta x_i y_i)$$

Differentiating (4) to obtain the minimum F with respect to α and β, we have

$$(5) \qquad \frac{\partial F}{\partial \alpha} = \frac{1}{1+\beta^2} \sum_i (2\alpha - 2y_i + 2\beta x_i)$$

$$(6) \qquad \frac{\partial F}{\partial \beta} = \left[(1+\beta^2)\left[\sum_i (2\beta x_i^2 + 2\alpha x_i - 2x_i y_i)\right] - 2\beta\left[\sum_i (y_i^2 + \beta^2 x_i^2 + \alpha^2 - 2\alpha y_i + 2\alpha\beta x_i - 2\beta x_i y_i)\right]\right] \Big/ (1+\beta^2)^2$$

Setting (5) and (6) equal to zero

$$\frac{\partial F}{\partial \alpha} = 0; \quad \alpha = \frac{1}{n}\left[\sum y_i - \beta \sum x_i\right]$$

The center of mass of a group of points is defined as

$$\bar{y} = \frac{1}{n}\sum y_i, \qquad \bar{x} = \frac{1}{n}\sum x_i$$

(7) $\alpha = \bar{y} - \beta\bar{x}$

For $\frac{\partial F}{\partial \beta} = 0$

$$\frac{\partial F}{\partial \beta} = \sum_i \left[2\beta x_i^2 + 2\alpha x_i - 2x_i y_i - 2\beta y_i^2 - 2\beta\alpha^2 n + 4\beta\alpha y_i - 2\alpha\beta^2 x_i + 2\beta^2 x_i y_i\right] \Big/ \left[1+\beta^2\right]^2 = 0$$

Substituting from (7), then $\alpha = \dfrac{\sum y_i - \beta \sum x_i}{n}$

$$\beta^2\left(\sum x_i y_i - \frac{\sum x_i \sum y_i}{n}\right) + \beta\left(\sum x_i^2 - \frac{\left(\sum x_i\right)^2}{n} + \frac{\left(\sum y_i\right)^2}{n} - \sum y_i^2\right)$$

$$+\left(\frac{\sum x_i \sum y_i}{n} - \sum x_i y_i\right) = 0$$

Or,

$$\beta^2\left[\sum_{i=1}^{n}\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)\right] + \left[\sum_{i=1}^{n}\left(x_i - \bar{x}\right)^2 - \sum_{i=1}^{n}\left(y_i - \bar{y}\right)^2\right]$$

$$- \sum_{i=1}^{n}\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right) = 0$$

Let $A = \sum_{i=1}^{n}\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)$

$$B = \sum_{i=1}^{n}\left(x_i - \bar{x}\right)^2 - \sum_{i=1}^{n}\left(y_i - \bar{y}\right)^2$$

$$C = -\sum_{i=1}^{n}\left(x_i - \bar{x}\right)\left(y_i - \bar{y}\right)$$

(8) Therefore $$\beta = \frac{-B \pm \sqrt{B^2 - 4AC}}{2A}$$

The correct solution will be the one which minimizes F, and passes through the center of mass $(\bar{x}, \bar{y})$.

APPENDIX V-B

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR WINTER EVENTS (1/1/72 - 3/20/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
1	4.1	1	3.85	-	1	3.85	-
3	4.0	2	3.01	-			
5	4.2	1	2.46	-			
6	5.2	4	4.19	0.04	2	4.18	
7	4.8	5	3.79	0.42	3	3.94	0.36
10	4.3	1	2.60	-			
11	4.8	1	3.92	-			
13	4.6*	3	4.53	0.40	2	4.53	-
14	3.9	2	4.23	-	2	4.23	-
16	4.5	2	3.04	-			
17	4.0	2	2.89	-	1	3.17	-
18	4.5	1	3.00	-			
19	4.0	2	3.97	-	2	3.97	-
20	3.9	1	2.80	-			
21	4.7	3	3.38	0.14	2	3.37	-
22	4.7	3	3.68	0.30	1	3.65	-
23	5.2	4	3.42	0.20	2	3.28	-
25	4.2	2	3.53	-	2	3.53	-
26	4.7	4	6.07	0.35	4	6.07	0.35
27	4.6	3	4.35	0.43	2	4.58	-
29	4.3	2	3.38	-	1	3.56	-
30	3.8	1	3.69	-	1	3.69	-
31	5.0	7	4.47	0.78	5	4.64	0.87
33	3.9	1	2.40	-			
34	4.0	1	3.93	-	1	3.93	-
35	4.4	3	3.72	0.93	3	3.72	0.93
36	4.9	6	3.95	0.35	4	3.82	0.37
37	4.8	6	4.21	0.16	4	4.27	0.15
38	4.0	5	4.09	0.34	5	4.09	0.34
39	5.3	6	5.04	0.27	4	5.11	0.21
40	3.9	5	3.38	0.39	3	3.63	0.14
41	5.1	3	3.61	0.05	2	3.58	-
43	4.7	6	3.39	0.30	4	3.46	0.22
46	3.8	1	2.50	-			
48	4.1	1	2.75	-			

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR WINTER EVENTS (1/1/72 - 3/20/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
50	4.9	5	3.79	0.25	3	3.91	0.19
52	4.8	3	3.66	0.28	1	3.41	-
54	4.2	1	2.40	-			
55	4.4	1	2.69	-			
56	4.2	1	2.50	-			
59	4.6	2	3.54	-	1	3.67	-
60	4.2*	2	3.49	-	1	3.37	
61	4.8	3	3.69	0.32	2	3.83	
62	4.6	4	3.84	0.19	3	3.92	0.12
65	3.8	2	3.35	-	1	4.00	
68	4.0	1	3.18	-	1	3.18	
69	4.8	1	2.80	-			
70	3.8	1	2.40	-			
71	3.8	4	2.98	0.38	3	3.03	0.45
72	4.4	1	3.99	-			
73	5.9	7	3.99	0.14	5	4.00	0.15
75	4.5	1	2.77	-	1	2.77	
76	4.4	2	3.06	-	1	3.19	
78	3.8	1	3.19	-	1	3.19	
80	3.9	1	3.14	-			
81	3.9	6	3.77	0.30	4	3.73	0.26
82	4.1	1	2.40	-			
85	3.6	1	4.42	-	1	4.42	
87	4.6	7	3.47	0.11	5	3.51	0.12
88	5.1	6	4.43	0.32	4	4.43	0.35
89	4.5	7	4.12	0.30	5	4.10	0.35
90	4.5*	7	3.83	0.46	5	3.89	0.55
91	4.2	1	3.37	-			
92	4.8	2	3.17	-	1	3.33	
93	4.8	2	3.37	-	1	3.53	
94	4.4	6	3.51	0.26	4	3.59	0.28
95	5.2	5	4.06	0.47	5	4.06	0.47
96	4.5	3	3.42	0.35	3	3.42	0.35
97	4.1*	7	3.37	0.34	5	3.38	0.41
98	4.3*	3	3.26	0.31	2	3.39	

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR WINTER EVENTS (1/1/72 - 3/20/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
99	4.1*	3	2.84	0.19	1	2.89	
100	3.6	2	2.77	-	2	2.77	
102	3.7*	1	2.33	-			
103	4.0*	3	3.02	0.18	1	3.20	
104	4.3*	6	3.42	0.28	4	3.56	0.22
105	4.2*	7	3.62	0.19	5	3.69	0.18
106	4.4*	5	3.31	0.15	4	3.36	0.12
108	4.7	1	3.20	-			
111	4.8	3	3.64	0.62	2	3.91	
112	5.7	6	4.93	0.31	5	4.95	0.34
113	4.3*	1	2.48	-			
114	4.8	5	3.70	0.18	4	3.75	0.16
116	5.5	1	2.75				
117	4.5	3	3.37	0.58	2	3.71	-
118	3.9	2	3,23	-			
119	4.1	4	3.38	0.18	2	3.50	-
120	4.9	4	4.25	0.22	2	4.41	-
121	4.3	2	2.87	-	1	2.63	
122	3.9	3	3.16	0.83	2	3.64	
123	4.6	6	3.85	0.21	4	3.90	0.22
125	4.5	3	3.30	0.12	1	3.35	
126	3.9	1	3.82	-		3.82	
127	4.1	2	2.75	-			
128	4.5	1	2.89	-			
129	4.8	4	3.67	0.25	2	3.55	
130	3.7	1	2.40	-			
131	4.7	4	3.46	0.38	2	3.48	
132	4.0	1	2.40	-			
133	5.2	3	3.94	0.38	3	3.94	0.38
134	5.4	3	4.83	0.13	3	4.83	0.13
137	3.9	1	3.21	-			
138	4.1	1	3.18	-			
139	4.8	4	3.70	0.23	2	3.76	
140	3.5	1	3.64	-		3.64	
141	5.3	4	4.06	0.18	3	4.07	0.22

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR WINTER EVENTS (1/1/72 - 3/20/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
143	3.4	3	3.15	0.72	2	3.53	
144	4.0	2	3.26	-	1	3.30	
145	4.8	4	3.67	0.28	2	3.64	0.19
146	4.7	4	3.62	0.23	2	3.59	
147	4.9	5	3.58	0.40	3	3.53	0.42
148	3.7	1	2.30	-			
151	4.3	1	3.10	-	1	3.10	
153	4.5	1	2.70	-			
156	5.0	5	4.42	0.44	3	4.39	0.42
164	4.0	2	2.91	-			
165	4.9	5	4.26	0.39	3	4.17	0.35
167	4.9	3	3.23	0.32	1	3.27	
169	3.8	3	3.02	0.48	2	3.28	
171	4.7	4	3.57	0.68	2	3.24	
172	5.3	4	4.60	0.68	3	4.74	0.81
175	4.9	5	4.05	0.23	3	4.12	0.30
179	4.4	4	3.03	0.19	2	3.19	
181	4.5	1	3.14	-			
184	4.1	1	2.50	-			
186	3.9	3	2.80	0.40	2	2.75	
189	4.4	2	3.16	-	1	3.11	
192	3.8	1	3.03	-	1	3.03	
193	4.4	3	3.53	0.66	2	3.34	
200	4.4	1	4.11	-	1	4.11	
205	3.6	3	3.45	0.57	2	3.68	
208	4.1	1	3.32	-	1	3.32	
211	3.4	1	2.30	-			
214	4.0	1	3.76	-	1	3.76	
218	3.7	1	3.26	-	1	3.26	
220	3.5	1	2.30	-			
223	4.3*	2	3.73	-	2	3.73	
224	4.0	2	3.21	-	1	3.32	
226	4.6	1	2.60	-			
227	4.1	1	2.50	-			
228	4.6	1	2.60	-			

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR WINTER EVENTS (1/1/72 - 3/20/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
229	3.8	1	2.20	-			
230	4.1	1	2.30	-			
232	4.4*	4	3.12	0.31	2	2.93	
233	4.5	3	3.41	0.40	1	3.42	
235	4.5	2	3.72	-			
236	4.4	1	3.40	-			
237	3.6	1	3.14	-	1	3.14	
238	5.1	1	3.00	-			
241	3.9	2	2.67	-	1	2.93	
243	5.4	2	4.09	-	1	4.17	
254	4.2	2	2.99	-	1	3.18	
255	4.6*	4	3.66	0.12	2	3.63	
256	3.5	3	3.23	0.28	2	3.39	
260	5.5	4	3.34	0.19	2	3.49	
262	4.9	2	4.11	-	2	4.11	
264	3.8	1	3.25	-	1	3.25	
266	3.6	2	3.21	-	1	3.42	
273	3.8	1	3.30	-			
275	4.1	1	2.90	-			
278	3.7	2	4.74	-	2	4.74	
280	3.7	1	2.90	-			
281	5.3	4	3.54	0.28	2	3.45	
286	4.5	3	4.42	0.61	3	4.42	0.61
288	3.4	1	2.98	-	1	2.98	
289	3.6	2	3.08	-	2	3.08	
290	3.5	1	3.83	-	1	3.83	
292	5.2	4	3.84	0.22	2	4.01	
294	5.2	6	4.53	0.36	4	4.46	0.44
296	3.5	2	2.67	-	1	2.54	
297	5.0	2	3.81	-	1	3.92	
298	3.6	2	3.31	-	1	3.71	
299	3.6	1	3.20	-	1	3.20	
300	4.7	5	3.50	0.58	3	3.64	0.76
303	3.9	1	2.70	-			
308	3.4	3	3.35	0.52	3	3.35	0.52
				$\overline{\text{S. D.}}$ 0.341			$\overline{\text{S. D.}}$ 0.352

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s)
FOR SUMMER EVENTS (6/1/72 - 7/31/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
310	3.9	2	2.90				
311	3.6	4	3.43	0.60	3	3.64	0.52
312	3.7	3	3.17	0.39	1	3.62	
314	3.8	2	3.00				
315	4.1	2	3.12	-	1	3.03	
316	3.8	2	3.54	-	1	4.18	
319	3.5	2	3.27	-	1	3.64	
320	3.9	3	3.42	0.73	1	4.27	
321	3.7	3	3.56	0.19	1	3.77	
322	4.3	2	3.33	-	1	3.56	
323	5.0*	5	4.25	0.45	3	4.34	0.09
324	4.2	3	3.24	0.61	1	3.81	
325	4.2	1	2.90				
326	4.0	2	2.80				
327	3.4	1	3.38	-	1	3.38	
328	3.5	1	3.49	-	1	3.49	
329	4.1	2	2.75				
330	3.5	2	3.47	-	1	3.83	
331	4.0	2	2.90				
332	4.3*	5	3.71	0.17	3	3.79	0.19
333	3.9	4	2.79	0.23	2	2.62	
334	4.8	3	3.26	0.25	1	3.27	
335	4.0	5	3.24	0.23	3	3.37	0.21
338	4.7	3	3.53	0.06	2	3.50	
339	5.5	1	3.40				
341	5.4	5	4.86	0.71	4	5.10	0.54
342	4.9	2	4.50	-	2	4.50	
343	4.9	4	4.04	0.41	2	3.94	
344	4.1	2	2.90				
345	4.3	1	3.70				
346	4.7	3	3.63	0.35	3	3.63	0.35
347	4.5	1	4.22	-	1	4.22	
348	4.7	3	4.16	0.54	1	4.78	
349	4.4	1	4.05	-	1	4.05	
350	4.9	8	3.71	0.53	6	3.60	0.58

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR SUMMER EVENTS (6/1/72 - 7/31/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
351	4.9	5	4.49	0.43	5	4.49	0.43
352	4.0	1	3.88	-	1	3.88	
354	4.5	5	3.66	0.18	3	3.57	0.19
355	3.7	2	2.60				
356	4.0	2	3.15				
357	3.3	2	2.35				
361	5.4	4	4.74	0.25	2	4.73	
362	5.1	3	4.69	0.51	3	4.69	0.51
364	5.1	3	4.04	0.20	1	3.81	
365	3.8	2	2.80	-	1	3.29	
366	4.7	3	3.69	0.28	2	3.69	
367	5.3	3	4.00	0.10	1	4.10	
368	3.6	1	2.10				
369	3.5	2	3.26	-	2	3.26	
370	3.6	1	3.00				
371	4.5*	4	4.11	0.10	3	4.14	0.09
372	4.3*	2	2.91	0.15	1	3.01	
373	4.9	3	4.04	0.33	2	3.97	
374	3.5	1	3.50	-	1	3.50	
375	3.3	1	2.93	-	1	2.93	
376	4.1	1	2.40				
379	3.7	2	2.95				
380	4.6	3	2.79	0.01	1	2.78	
381	4.6	4	3.34	0.24	2	3.49	
382	4.3	3	3.65	0.19	1	3.44	
383	3.9	1	2.50				
384	4.3	1	2.80				
385	4.4	4	2.73	0.19	2	2.81	
386	5.0	3	4.10	0.43	2	4.15	
388	4.5	3	3.39	0.40	2	3.24	
389	4.1	2	2.55				
390	4.0	1	3.46	-	1	3.46	
391	3.7	2	2.45				
392	3.6	1	3.85	-	1	3.85	
393	4.3	2	3.24	-	1	3.37	

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR SUMMER EVENTS (6/1/72 - 7/31/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
394	3.7	1	2.70				
395	4.1	2	3.05				
396	4.3	3	2.78	0.23	1	3.03	
399	4.5	1	3.93	-	1	3.93	
400	3.7	2	2.75				
401	3.4	1	2.40				
402	4.6	4	3.23	0.36	2	3.28	
403	3.7	1	2.70				
404	3.5	1	3.00				
405	4.5*	3	3.20	0.27	2	3.35	
406	6.0	1	6.00				
409	3.7*	2	2.65				
410	4.7	6	4.02	0.34	4	3.93	0.36
411	4.1	4	3.58	0.37	2	3.82	
412	5.0	6	4.37	0.32	4	4.36	0.25
413	3.6	1	2.40				
414	3.7	3	3.03	0.23	1	3.29	
415	4.0	2	2.82	-	1	3.03	
416	5.5	6	4.30	0.47	4	4.20	0.47
417	3.8	1	3.60				
418	4.4	3	3.91	0.02	1	3.93	
419	5.2*	5	3.99	0.52	3	3.98	0.62
421	5.1	5	4.28	0.25	3	4.31	0.32
422	4.6*	3	3.18	0.68	2	3.47	
423	3.6	2	2.95				
424	4.2	2	2.45				
425	3.4	1	2.00				
426	4.3	2	3.13	-	1	3.46	
427	5.6	6	4.83	0.17	4	4.87	0.16
428	3.9	2	2.50				
429	3.9	1	4.08	-	1	4.08	
430	3.7	2	2.55				
431	4.6*	3	3.84	0.10	1	3.73	
432	4.4	2	3.67	-	1	3.94	
433	4.9	5	4.24	0.45	3	4.23	0.31

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR SUMMER EVENTS (6/1/72 - 7/31/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
434	4.0	1	2.80				
435	3.4	1	2.40				
436	5.4	3	4.94	0.22	1	4.83	
437	4.6	3	3.47	0.16	1	3.62	
438	5.0	4	3.90	0.24	3	3.87	0.28
439	4.3	1	2.70				
440	4.0	1	2.80				
441	4.0	2	3.29	-	1	3.48	
442	5.1	3	3.89	0.10	1	3.86	
444	3.4	2	2.80				
445	3.9	1	3.00				
446	4.4	3	3.11	0.34	1	3.40	
447	3.6	1	2.70				
449	4.6	5	3.87	0.17	3	3.84	0.23
450	3.5	1	2.80				
451	4.3	3	3.37	0.30	1	3.70	
452	3.4	1	3.67	-	1	3.67	
453	4.0	3	3.30	0.09	1	3.27	
454	4.7	2	3.04	-	1	3.10	
455	4.1	2	2.85				
456	4.4	2	2.89	-	1	3.17	
457	3.1	3	2.80	0.10	1	2.70	
458	4.3	1	3.67	-	1	3.67	
460	3.7	1	2.70				
461	5.0	3	4.59	0.09	3	4.59	0.09
462	3.7	1	3.70				
463	4.7	1	2.70				
464	4.9	3	4.02	0.06	3	4.02	0.06
465	4.2	1	3.10				
466	4.0	2	2.53	-	1	2.55	
467	4.1	3	3.34	0.65	2	3.72	
469	4.1	1	2.77				
470	4.7	3	3.55	0.14	1	3.42	
471	4.2	1	2.90				
472	5.2	6	3.86	0.28	4	3.96	0.13

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR SUMMER EVENTS (6/1/72 - 7/31/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
473	3.6	1	2.52				
474	3.7	1	2.80				
475	4.7	4	3.72	0.26	2	3.86	
476	5.2	6	3.94	0.34	4	4.05	0.23
477	3.5	1	3.10				
479	4.1	2	3.34	-	2	3.34	
481	3.9	1	3.20				
482	4.2	4	3.50	0.26	2	3.68	
483	3.7	1	3.30				
485	3.8	2	3.43				
486	3.9	1	3.00				
487	4.4	2	3.06				
488	3.9	1	2.70				
489	3.4	1	2.79				
490	3.9	1	2.50				
491	3.8	2	2.85				
492	5.1	5	4.22	0.33	3	4.24	0.50
493	4.4	2	2.81	0.44	1	3.12	
494	3.7	1	2.20				
495	3.5	1	2.40				
496	5.2	5	4.18	0.36	3	4.20	0.48
497	4.9	5	4.34	0.16	3	4.31	0.23
498	4.7	2	3.70				
499	4.6	7	3.83	0.44	5	3.83	0.21
501	4.2	2	3.05				
502	3.9	2	3.16	-	1	3.62	
503	4.2	2	3.54	-	2	3.54	
504	3.9	1	3.00				
505	5.3	7	3.91	0.57	5	4.05	0.58
506	3.3	1	2.00				
507	3.4	1	3.00				
508	4.1	1	3.87	-	1	3.87	
509	4.5	1	2.80				
510	4.0	2	2.75				
511	3.7	1	2.60				

NETWORK RAYLEIGH WAVE MAGNITUDES (M_s) FOR SUMMER EVENTS (6/1/72 - 7/31/72)

Event Number	m_b	VLPE, NORSAR, and ALPA			VLPE		
		n	Average M_s	S. D.	n	Average M_s	S. D.
512	4.0	3	3.00	0.20	1	3.19	
513	5.2	2	4.02	-	2	4.02	
516	3.6	1	2.80				
517	3.9	2	3.49	-	1	3.83	
518	4.3	1	3.38				
520	4.8	1	4.20				
521	4.6	4	3.68	0.34	2	3.41	
522	5.5	6	5.02	0.18	4	4.96	0.14
523	4.7	2	3.04				
524	3.9	1	2.90				
525	3.6	2	3.00				
526	3.7	1	2.87				
527	4.4	3	3.06	0.06	1	3.09	
528	4.0	1	3.30				
529	4.8	2	3.57				
530	4.5	2	3.38	-	1	3.55	
531	4.3	1	2.40				
532	4.0	2	3.14				
534	5.1	4	4.33	0.25	2	4.32	
535	5.1	4	4.36	0.18	2	4.31	
537	3.8	1	2.80				
538	3.8	2	3.43				
539	4.8	4	3.66	0.43	2	3.57	
541	5.1	3	4.21	0.50	3	4.21	0.50
543	4.9	2	3.74	-	1	3.72	
546	4.8	3	3.53	0.14	1	3.61	
547	4.6	1	4.44	-	1	4.44	
548	3.6	2	2.75				
				$\overline{\text{S. D.}}$ 0.295			$\overline{\text{S. D.}}$ 0.328